Discipline Report

Public Lands, Section 4(f)

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Seattle Department of Transportation
Agreement No. T01-34

Environmental Assessment

Magnolia Bridge Replacement

City of Seattle

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Regulatory Requirements

Section 4(f)

Protection of certain public lands and all historic sites was originally mandated in Section 4(f) of the 1966 Department of Transportation Act (49 United States Code [USC] 303). Section 4(f) declares a national policy to preserve, where possible, "the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Under Section 4(f), the Federal Highway Administration (FHWA) and other U.S. Department of Transportation (USDOT) agencies can only approve the use of these lands if no feasible and prudent alternative exists, and the sponsoring agency demonstrates that all possible planning to minimize harm has been accomplished. Supporting information must demonstrate that unique problems exist or unusual factors are involved in the use of alternatives that avoid these properties or that the cost, social, economic, and environmental impacts, or community disruption resulting from such alternatives reach extraordinary magnitude.

Use of Section 4(f) land is not limited to property acquisitions. FHWA rules require that Section 4(f) evaluation be called into effect even if the project does not actually intrude into a protected use. This evaluation occurs when a project's impacts in the proximity of protected areas are so severe that the resources' activities, features, or attributes are substantially impaired. Such impacts are referred to as "constructive use" of Section 4(f) land. Impacts constituting "constructive use" of Section 4(f) resources can include the following:

- Resources affected by noise levels.
- Aesthetic features of the resource compromised by the transportation facility.
- Restricted access that substantially diminishes the utility of the resource.
- Vibrations that impair use of the resource and diminish the value of wildlife habitat.

Section 6(f)

Section 6(f) of the Land and Water Conservation Funds Act applies to conversion of outdoor recreation property acquired or developed with grant assistance from an Interagency Committee for Outdoor Recreation. Under this statute, the Secretary of the Interior must approve any conversion of such property. No property to which Section 6(f) would apply has been identified in the study area.

Section 4(f) Resources

The study area contains several park and recreation resources including Smith Cove Park, Thorndyke Park, the North Bay/Terminal 91 bicycle path, and a group of recreational parcels acquired in the Smith Cove area, known as the Smith Cove Acquisition Project. Historic resources in the study area include four structures that

appear to meet the criteria for listing in the National Register of Historic Places (NRHP) (see the Historic, Cultural, and Archaeological Discipline Report for additional information). One additional structure may meet City of Seattle landmark eligibility criteria. No wildlife or waterfowl refuges are located in the study area.

The Build Alternatives propose construction of the new bridge, in varying degrees, over portions of the Smith Cove Acquisition Project parcels, which are city-owned parkland. The Seattle Department of Transportation (SDOT) and Seattle Parks and Recreation have established a Joint Development Agreement for construction of the bridge within these parcels (Appendix A). This Joint Development Agreement will exempt use of these parcels from Section 4(f) requirements consistent with Section 14 of the FHWA Section 4(f) Policy Paper of 1987, revised 1989 (FHWA 1987).

Alternative C would displace the Terminal 91 bicycle path on the west side of the Port property. Although a specific route has yet to be determined, it is anticipated that this segment of the path would be relocated on Port property east of the proposed ramp that would cut diagonally in front of the face of the Magnolia Bluff greenbelt.

Alternatives C and D would remove one of the four NRHP-eligible structures in the project area (Building 9). In addition, the extent of archaeological resources below the ground surface is unknown; therefore, archaeological impacts could result from constructing any of the Build Alternatives. Section 4(f) would only apply to archaeological sites on or eligible for inclusion in the NRHP and which warrant preservation in place. No "constructive use" of Section 4(f) resources has been identified under any of the Alternatives.

Purpose

The purpose of this project is to replace the existing Magnolia Bridge structure, approaches, and related arterial connections with facilities that maintain convenient and reliable vehicular and non-motorized access between the Magnolia community and the rest of the City of Seattle. The bridge provides an important link to the Magnolia community in Seattle (see Figure 1and Figure 2). Because the existing bridge provides the only public vehicular access to the land between North Bay, also referred to as Terminal 91, Smith Cove Park, Elliott Bay Marina, and U.S. Navy property, the project purpose also includes maintenance of access to these areas.

Need

Structural Deficiencies

The City of Seattle has identified the Magnolia Bridge as an important bridge that should remain standing following a "design" seismic event (an earthquake with a peak ground acceleration of 0.3g that is anticipated to happen every 475 years and may measure 7.5 on the Richter scale). Even with the repairs completed following the February 2001 earthquake, the existing bridge is susceptible to severe damage and collapse from an earthquake that is less severe than the "design" seismic event.

The original bridge was constructed in 1929 and has been modified, strengthened, and repaired several times. The west end of the bridge was damaged by a landslide in 1997, requiring repair and replacement of bridge columns and bracing, the construction of six additional supports, and a retaining wall north of the bridge to stabilize the bluff from further landslides. Repairs after the 2001 earthquake included replacement of column bracing at 27 of the 81 bridge supports. A partial seismic retrofit of the single-span bridge structure over 15th Avenue West was completed in 2001. The other spans were not upgraded.

Inspections of the bridge conclude that the concrete structure is showing signs of deterioration. The concrete is cracking and spalling at many locations, apparently related to corrosion of the reinforcing steel. The bridge requires constant maintenance in order to maintain its load capacity, but there does not appear to be any immediate load capacity problem. The existing foundations have insufficient capacity to handle the lateral load and uplift forces that would be generated by a "design" seismic event. The existing foundations do not extend below the soils that could liquefy during a "design" seismic event. If the soils were to liquefy, the foundations would lose their vertical-load-carrying ability and the structure would collapse.

System Linkage

There are three roadway connections from the Magnolia community, with more than 20,000 residents, to the rest of Seattle. As the southernmost of the three connections, the Magnolia Bridge is the most direct route for much of south and west Magnolia to downtown Seattle and the regional freeway system.

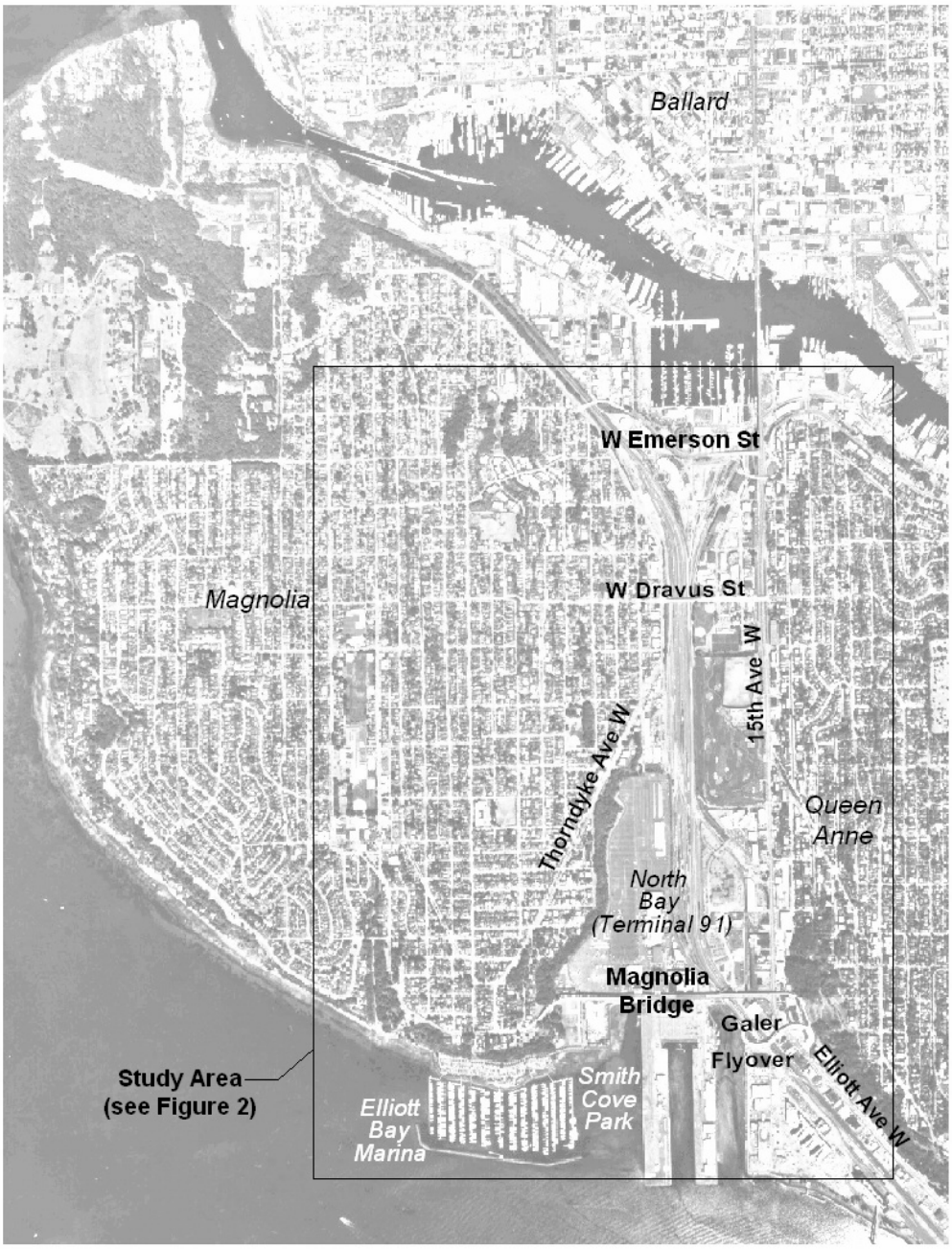


Figure 1
Vicinity Map

In meetings with the public and the Seattle Fire Department, the importance of this route for emergency services has been emphasized. The loss of use of this bridge in 1997 and again in 2001 demonstrated to the City that the remaining two bridges do not provide acceptable operation. During the bridge closure following the February 2001 earthquake, the City addressed community concerns about reduced emergency response time to medical facilities outside of Magnolia by stationing paramedics at Fire Station 41 (2416 34th Avenue West) 24 hours a day.

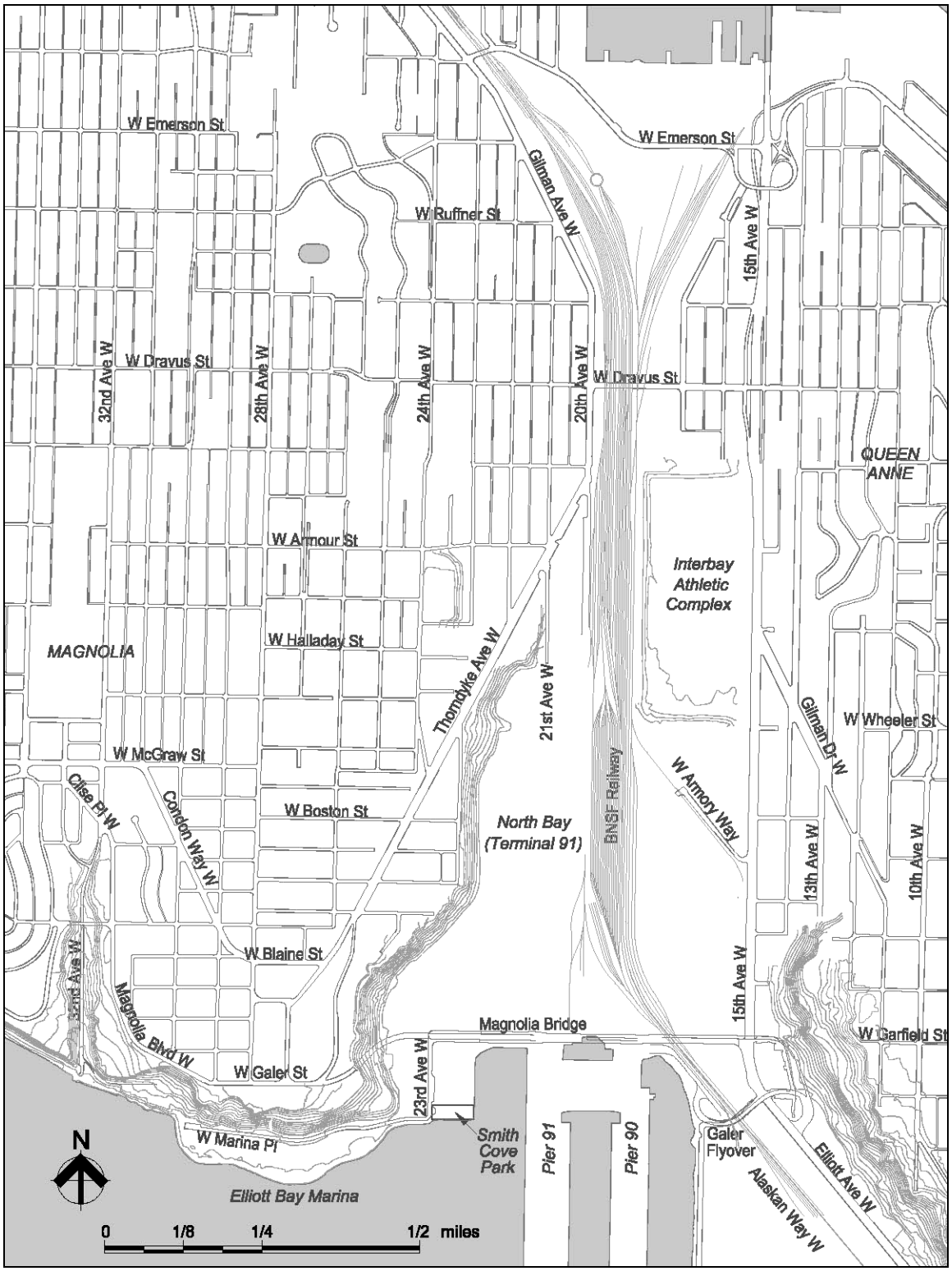


Figure 2
Study Area

Traffic Capacity

The three Magnolia community connections to the 15th Avenue West corridor are adequate for the present volume of traffic. Each of the three connections carries 30 to 35 percent of the 60,100 daily vehicle trips (2001 counts) in and out of the Magnolia community. Loss of the use of the Magnolia Bridge for several months after the February 2001 earthquake, and in 1997 following the landslide at the west end of the bridge, resulted in lengthy 15- to 30-minute delays and increased trip lengths for many of the users of the Magnolia Bridge. These users were required to use one of the two remaining bridges at West Dravus Street and West Emerson Street. Travel patterns in the Magnolia community changed substantially resulting in negative impacts on local neighborhood streets. The increase of traffic through the West Dravus Street and West Emerson Street connections also resulted in congestion and delay for the regular users of these routes. Losing the use of any one of these three bridges would result in redirected traffic volumes that would overwhelm the capacity of the remaining two bridges.

Modal Interrelationships

The Magnolia Bridge carries three of the four local transit routes serving Magnolia and downtown Seattle destinations. The topography of the east side of Magnolia, East Hill, would make access to the 15th Avenue West corridor via the West Dravus Street Bridge a circuitous route for transit. Use of the West Emerson Street connection to 15th Avenue West would add significant distance and travel time for most trips between Magnolia and downtown Seattle.

The Magnolia Bridge has pedestrian facilities connecting the Magnolia neighborhood to Smith Cove Park and Elliott Bay Marina as well as to 15th Avenue West/Elliott Avenue West. These facilities need to be maintained. The Elliott Bay multi-use trail connects Magnolia with downtown Seattle through Myrtle Edwards Park. The trail passes under the Magnolia Bridge along the west side of the BNSF rail yard, but there are no direct connections to the bridge.

Bicycle facilities on Magnolia Bridge need to be maintained or improved. Even with the steep (about 6.3 percent) grade, bicyclists use the Magnolia Bridge in both directions. There are no bike lanes on the bridge, so cyclists use the traffic lanes and sidewalks. Once cyclists cross the bridge, they must either travel with motor vehicles on Elliott Avenue West or find a way back to the Elliott Bay Trail using local east-west streets such as the Galer Flyover.

Transportation Demand

The existing Magnolia Bridge provides automobile access for Port of Seattle North Bay (Terminal 91) to and from Elliott Avenue West/15th Avenue West. Truck access between Terminal 91 and Elliott Avenue West/15th Avenue West is accommodated via the Galer Flyover. Future planned expansion of the Amgen facility on Alaskan Way West and redevelopment of underutilized portions of North Bay and other areas of Interbay will increase demand for traffic access to the Elliott Avenue West/15th Avenue West corridor. The Port of Seattle has a master planning process under way (July 2003) for its North Bay (Terminal 91) property and the Washington National Guard property east of the BNSF Railway between West Garfield Street and West Armory Way. This area contains 82 acres available for redevelopment. There are also 20 or more acres of private property available for redevelopment east of the BNSF Railway between West Wheeler Street and West Armory Way. Redevelopment of the North Bay property will include public surface

streets with connections to the replacement for the Magnolia Bridge. Forecasts of future (year 2030) traffic demand indicate that the access provided by the Galer Flyover and West Dravus Street would be inadequate. The capacity provided by the existing Magnolia Bridge or its replacement would also be needed.

Legislation

Seattle Ordinance 120957, passed in October 2002, requires that the Magnolia Bridge Replacement Study: (1) identify possible additional surface roads from Magnolia to the waterfront (avoiding 15th Avenue West and the railroad tracks); (2) obtain community input on the proposed roads; and (3) identify the cost for such roads and include it in the total cost developed in the Magnolia Bridge Replacement Study.

An alignment study process was implemented to help identify the specific bridge replacement alternatives to be studied in the EIS. Twenty-five concepts were developed and screened against the project goals and objectives. This resulted in nine alignment alternatives, identified as A through I, that merited further analysis. These nine went through an extensive public review and comment process as well as project screening criteria and prioritization. Initially, the top four priority alternatives, A, B, D, and H, were identified to be studied in the EIS. Early on, Alternative B was eliminated because it became clear that it violated City shoreline policies and Federal Section 4(f) criteria. Upon detailed traffic analysis, Alternative H was eliminated because two key intersections were predicted to function at a level of service F and could not be mitigated. The next priority, Alternative C, was then carried forward for analysis in the EIS.

Independent of this project, a new north-south surface street will be constructed on Port of Seattle property connecting 21st Avenue West at the north end of North Bay with 23rd Avenue West near Smith Cove Park. In addition, a southbound ramp will be added to the Galer Flyover to accommodate eastbound to southbound Elliott Avenue West traffic movements. The Galer Flyover ramp has been identified as a needed improvement for expected future development of property west of the railroad tracks. Locations for new surface streets through the Port of Seattle property will be determined through the Port's master planning process for the North Bay property. The north-south surface street and ramp are assumed to exist under any build alternative, but they are not part of this environmental process.

Typical cross sections and plans of the build and no build alternatives are located at the end of this section.

No Build Alternative

The No Build Alternative, shown in Figure 3 and Figure 5, would maintain the existing bridge structure in place with the existing connections at the east and west ends. Long-term strategies for maintaining the existing structure would be required for the No Build Alternative. To keep the existing bridge in service for over 10 years, the following would need to be accomplished:

- An in-depth inspection of the bridge would be required to determine needed repairs and a long-term maintenance program.
- Concrete repairs would be required. These repairs could include injection of epoxy grout into cracks, repair of spalled concrete, and replacement of deficient concrete and grout.
- Preservation measures to slow corrosion of the reinforcement would be required. These measures could include a cathodic protection system.
- Any structural elements that lack the capacity to carry a tractor-trailer truck with a 20-ton gross trailer weight would need to be identified, modeled, and strengthened.

Alternative A

Alternative A would replace the existing bridge with a new structure immediately south of the existing bridge as shown in Figure 4 and Figure 6. The alternative would construct a signalized, elevated intersection (Alternative A – Intersection) in the bridge's mid-span to provide access to the waterfront and the Port of Seattle North Bay property from both the east and west. Connections at the east and west ends of the bridge would be similar to the existing bridge.

An optional half-diamond interchange (Figure 7, Alternative A – Ramps) could be constructed in lieu of the elevated intersection to provide access to the waterfront and the Port of Seattle North Bay property to and from the east only.

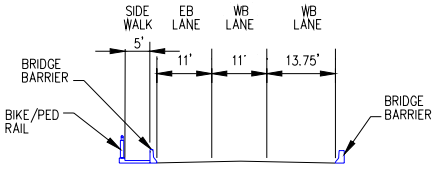
Alternative C

Alternative C would provide 2,200 feet of surface roadway within the Port of Seattle North Bay property between two structures as shown in Figure 4 and Figure 8. The alternative alignment would descend from Magnolia Bluff on a structure running along the toe of the slope. The alignment would reach the surface while next to the bluff before turning east to an intersection with the north-south surface street. The alignment would continue east from the intersection, turning south along the west side of the BNSF rail yard. The alignment would rise on fill and structure, turning east to cross the railroad tracks and connect to 15th Avenue West.

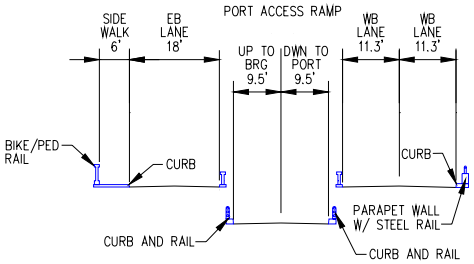
Alternative D

Alternative D would construct a new bridge in the form of a long arc north of the existing bridge as shown in Figure 4 and Figure 9. Connections at the east and west ends of the bridge would be similar to the existing bridge. This alternative would construct a signalized, elevated intersection (Alternative D – Intersection) in the bridge's mid-span to provide access to the waterfront and Port of Seattle North Bay property from both the east and west.

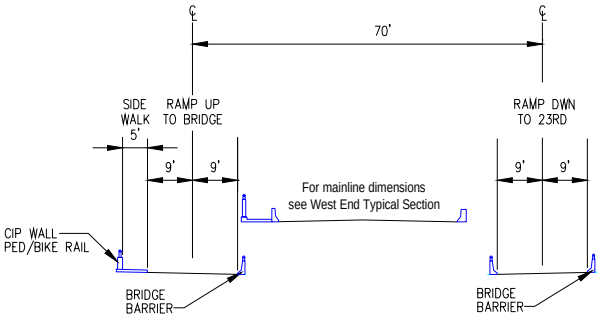
An optional half-diamond interchange (Figure 10, Alternative D – Ramps) could be constructed in lieu of the elevated intersection to provide access to the waterfront and the Port of Seattle North Bay property to and from the east only.



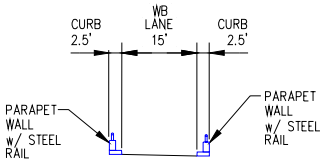
Bridge West End



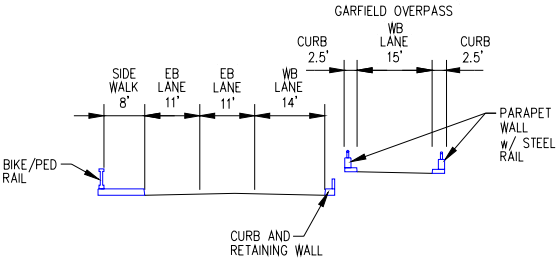
Ramp to Port Access



Ramps to 23rd Avenue West



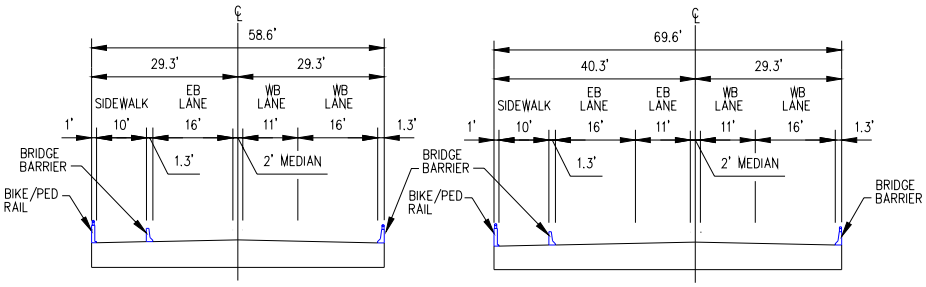
Garfield Overpass



15th Avenue West Connection
Eastbound Off-Ramp
Westbound On-Ramp

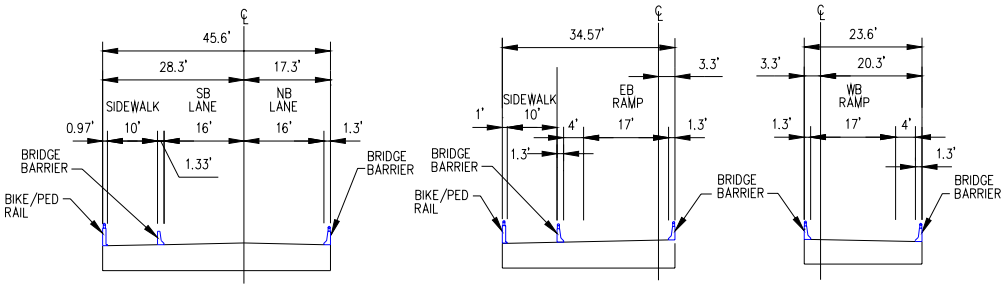
NOTE:
Dimensions are approximate and obtained from construction plans and aerial photographs. The information shown has not been field verified.

Figure 3
Typical Sections – No Build Alternative



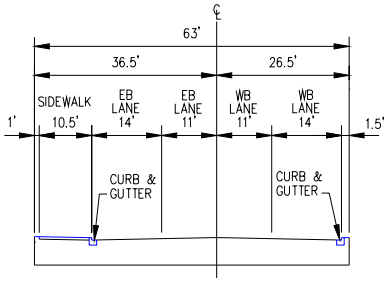
West End East End

Typical Bridge Structure

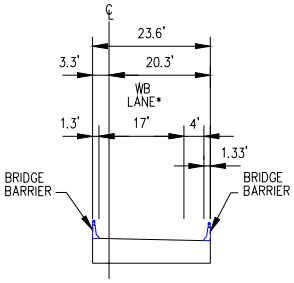


T-Ramp On-Ramp Off-Ramp

Typical A & D Intersection Option Typical A & D Ramp Option

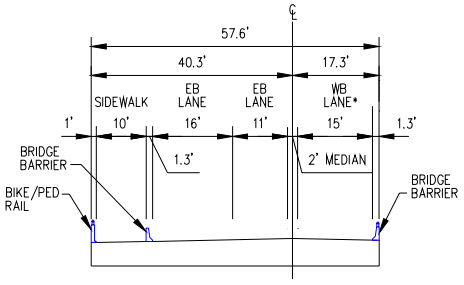


Typical Alternative C Surface Road



Garfield Overpass

* 15' Alternative C
19' Alternative D



15th Avenue West Connection

Eastbound Off-Ramp

Westbound On-Ramp

* 16' Alternative D

Figure 4
Typical Sections – Build Alternatives

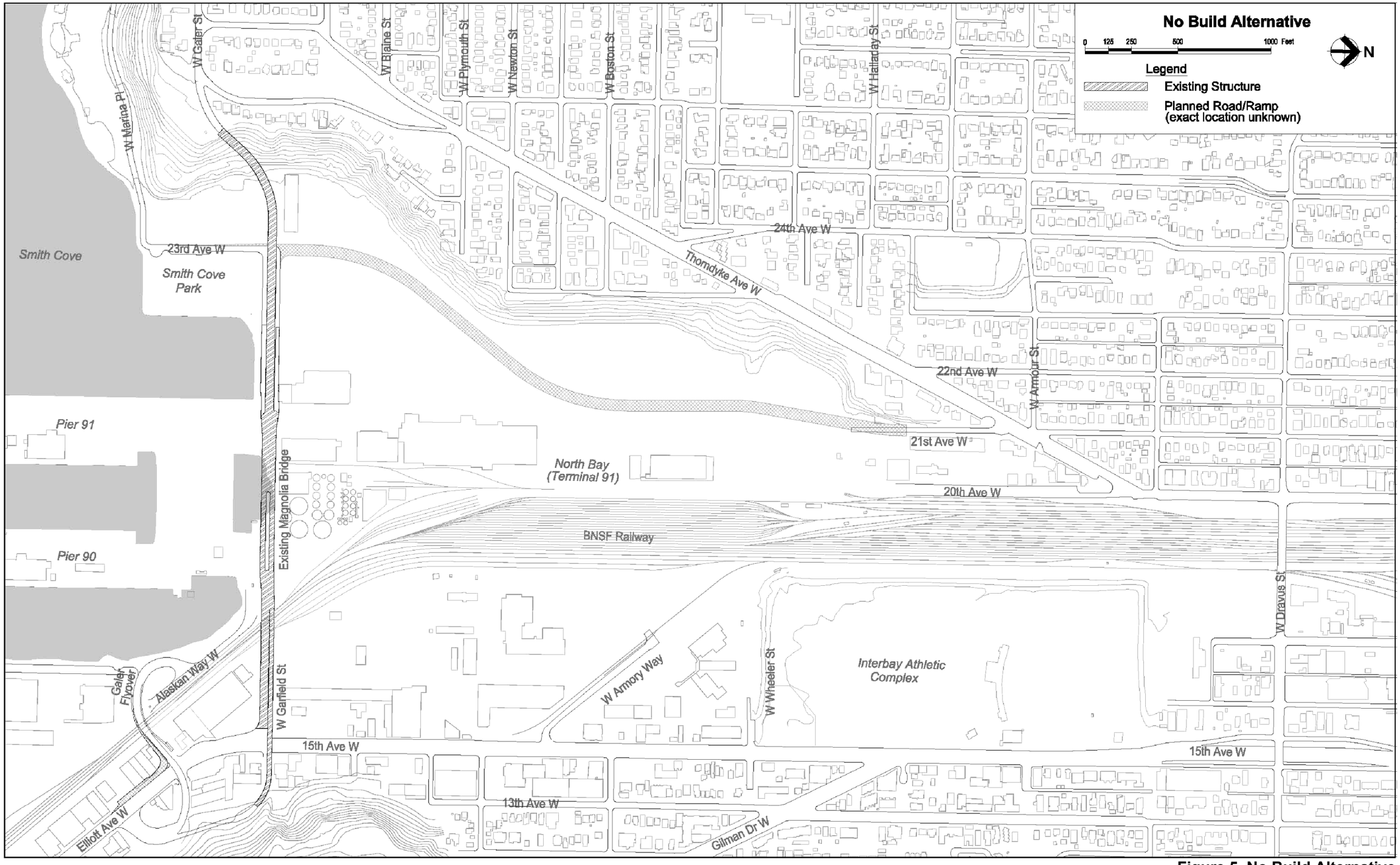


Figure 5 No Build Alternative

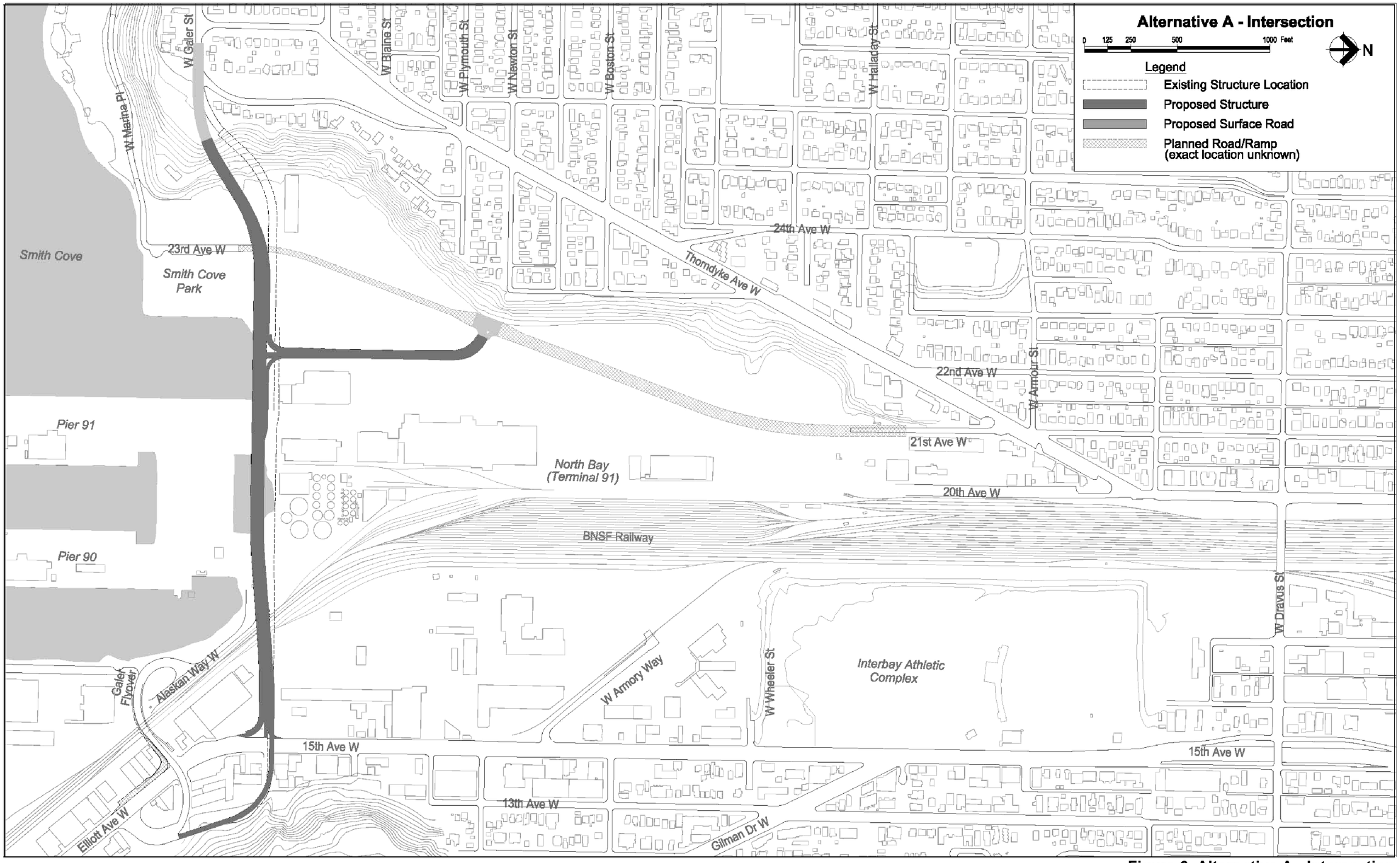


Figure 6 Alternative A - Intersection

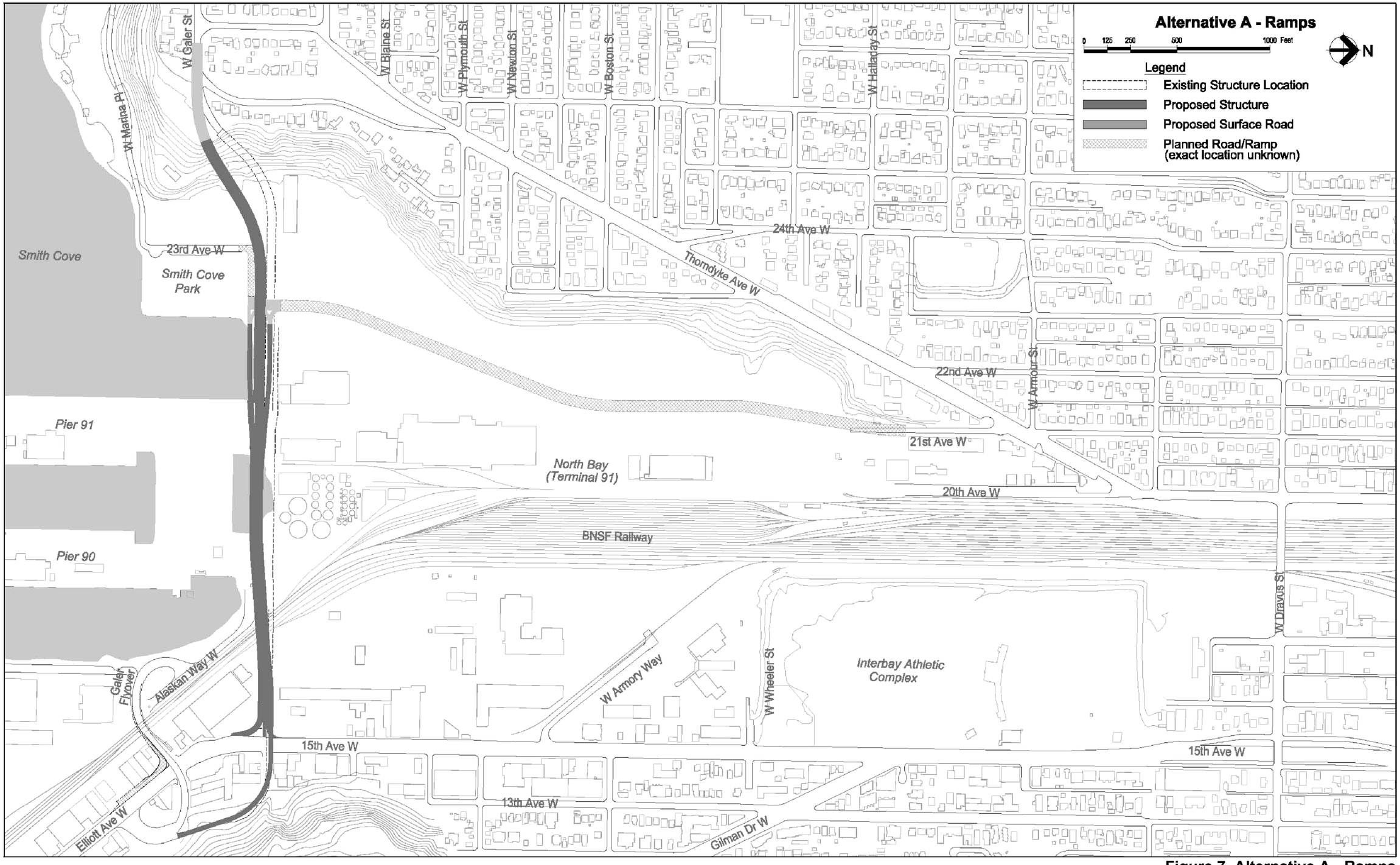


Figure 7 Alternative A - Ramps

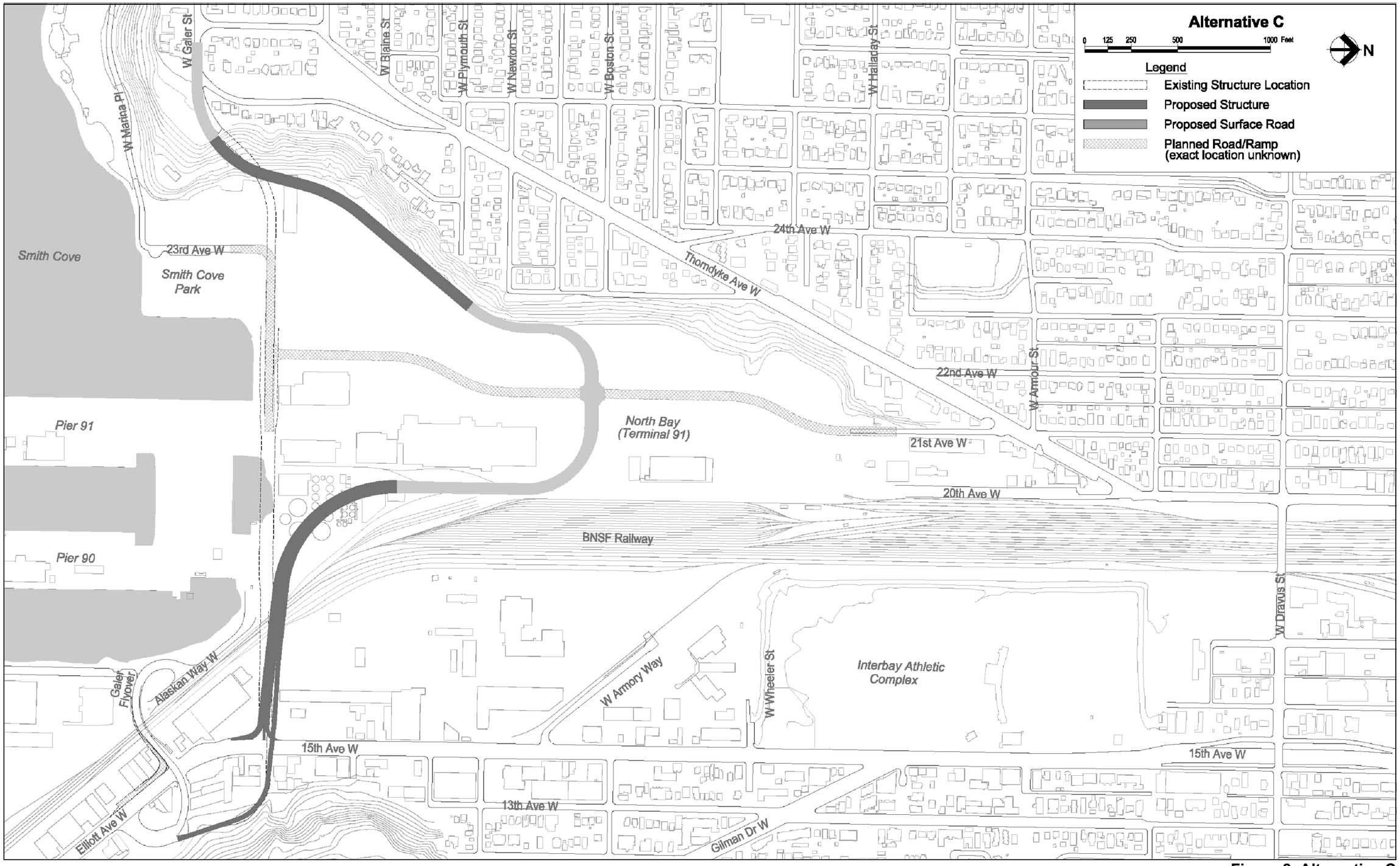


Figure 8 Alternative C

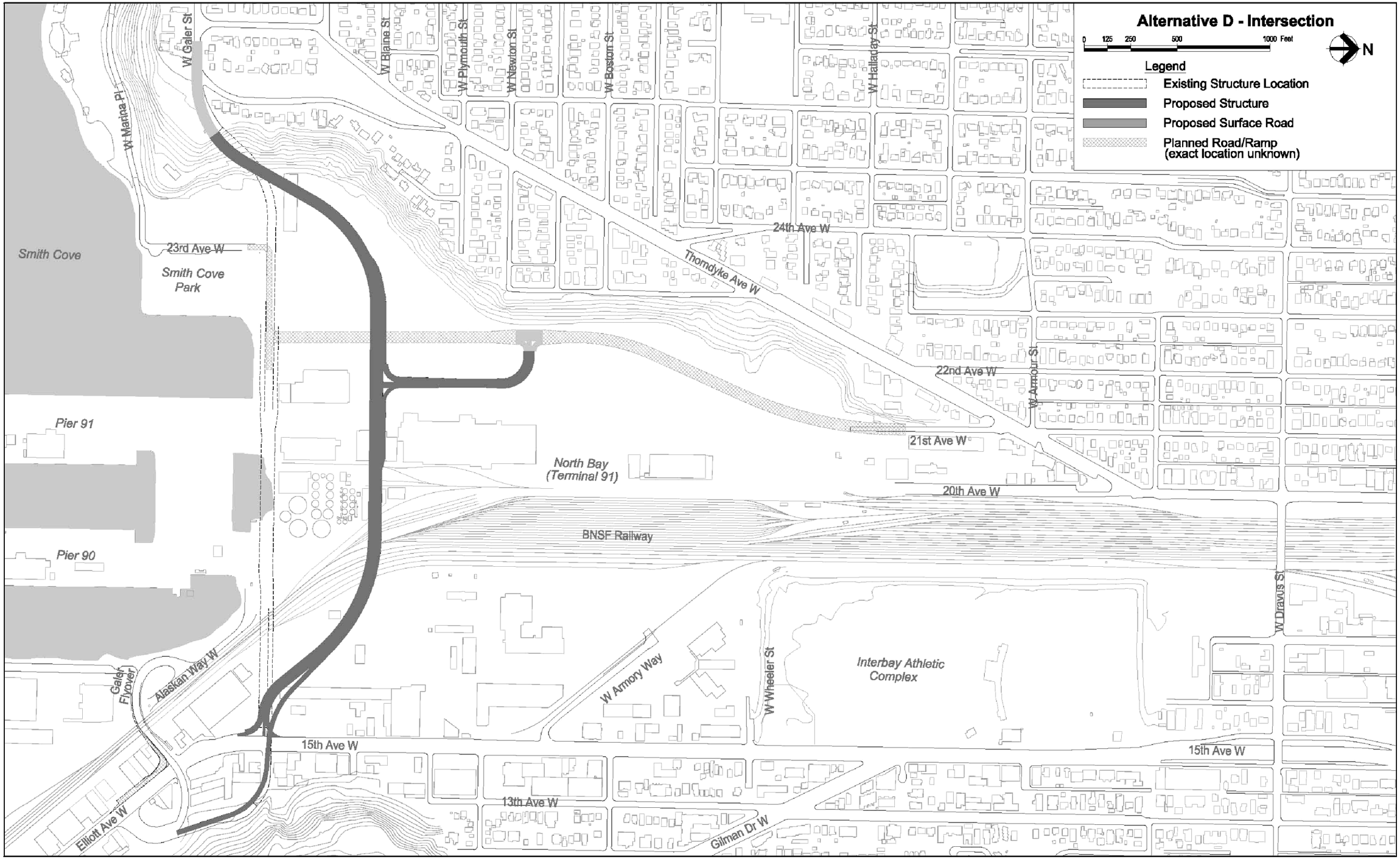


Figure 9 Alternative D - Intersection

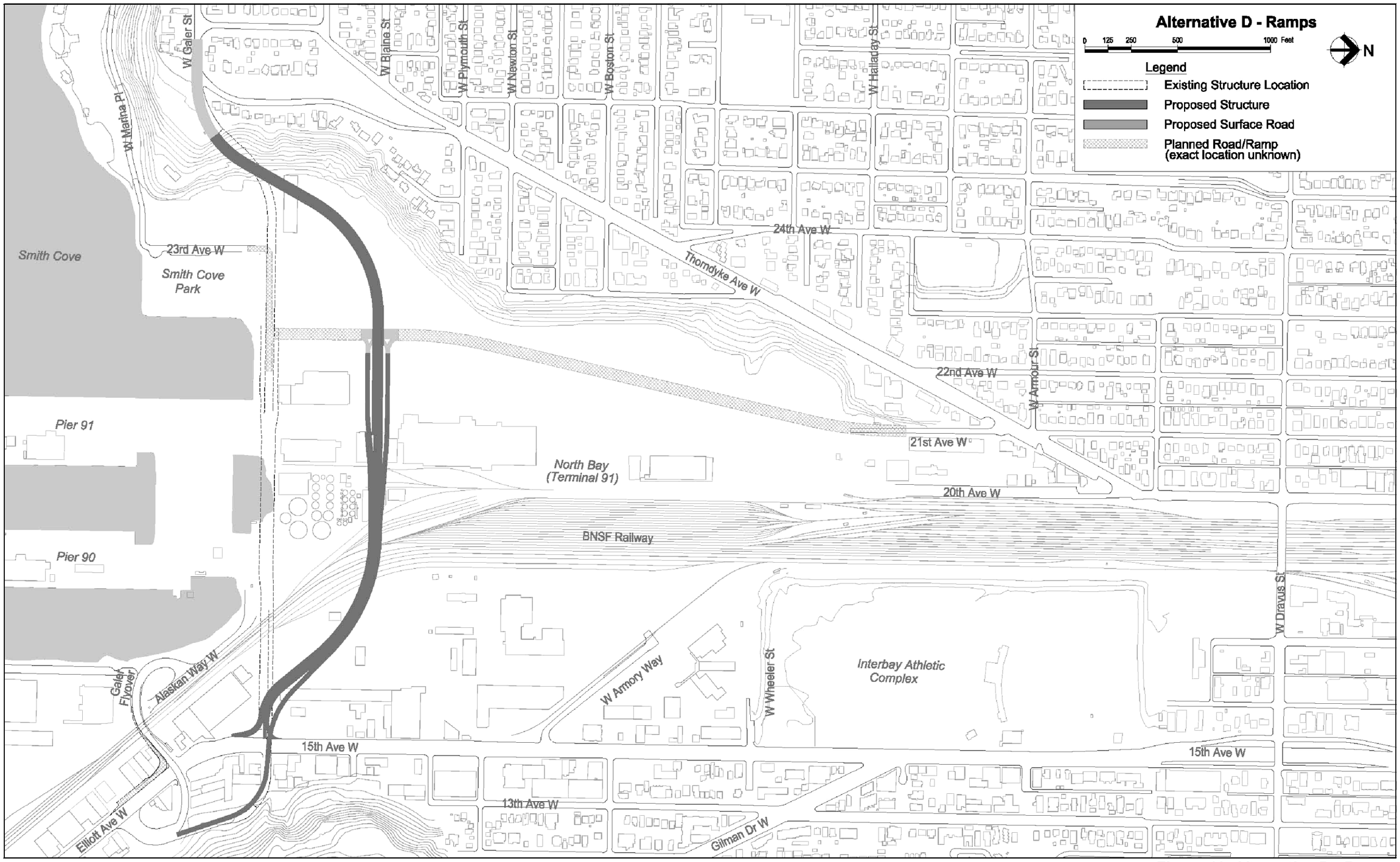


Figure 10 Alternative D - Ramps

This Public Lands, Section 4(f) Discipline Report has been prepared consistent with the guidelines contained in Section 455 of the Washington State Department of Transportation (WSDOT) *Environmental Procedures Manual* (2004). The discipline report also reflects analyses to be conducted for the Section 4(f) evaluation.

The Section 4(f) evaluation will be prepared consistent with Section 411.09(1) of the WSDOT *Environmental Procedures Manual*, Chapter 24.39(c) of the WSDOT Local Agency Guidelines, and Section IX of FHWA's Technical Advisory 6640.8A. Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303) provides that a project will not be approved by the FHWA if it requires the use of any publicly owned land from a public park, recreation area, wildlife or water fowl refuge, or property of a historic site of national, state, or local significance unless no feasible and prudent alternative to the use of such land exists, and the project includes all possible planning to minimize harm from the resulting use. The Draft Environmental Impact Statement (EIS) for this project will include a Section 4(f) evaluation addressing 4(f) resources of national, state, or local significance that could be adversely affected by the proposed project alternatives. Section 4(f) applies to all historic sites, but only to publicly owned public parks, recreation areas, and wildlife and waterfowl areas. Section 4(f) does not apply when parks, recreational areas, and wildlife and waterfowl refuges are privately owned, even if such areas are open to the public.

For this report, additional information needs are identified that are relevant if an alternative uses Section 4(f) facilities and a finding must be made that there are no feasible and prudent alternatives. Evaluating the feasibility and prudence of alternatives pursuant to 23 Code of Federal Regulations (CFR) 771.135 includes evaluation of:

- Unique engineering or construction problems,
- Extraordinary costs,
- Community disruption of extraordinary magnitude,
- Severe adverse environmental impacts,
- Greater impacts on other Section 4(f) lands,
- Failure to fulfill a public need, and
- Other truly unusual factors.

The final Section 4(f) report will fully report on prudent and feasible alternatives and why alternatives that avoid use of Section 4(f) facilities were not selected. In addition, conceptual plans will be revised, as appropriate, to address design changes aimed to minimize harm.

There are two types of potential Section 4(f) resources in the project area—public parks and recreation areas and historic and cultural resources. The methods used to evaluate these resources are described in more detail below.

Section 4(f) Recreation Resources

For purposes of the parks and recreation analysis, the study area boundaries include West Wheeler Street on the north, 10th Avenue West on the east, the Elliott Bay

waterfront on the south (from Terminal 86 to the extension of 32nd Avenue West), and 32nd Avenue West on the west.

To identify existing public park and recreational facilities, a field reconnaissance of the study area was conducted. In addition, aerial photos and City of Seattle Geographic Information System (GIS) data were reviewed (City of Seattle 2003a). This inventory of facilities involved searching for designated open space areas, designated parks and play areas, bicycle and pedestrian facilities, and playfields associated with public schools.

Representatives from the Seattle Parks and Recreation Department were contacted to gather information about ongoing and planned park and recreation facilities and activities in the study area. Also, the Seattle Parks and Recreation Plan 2000 was reviewed.

To evaluate impacts on parks and recreation facilities, the alternative alignments were compared to existing park locations. Also, the Air, Noise, Visual Quality, Land Use, and Traffic and Transportation discipline reports were reviewed to determine potential indirect impacts to such facilities, such as shadow effects and access restrictions.

Section 4(f) Historic, Cultural, and Archaeological Resources

Cultural resources staff met with the Washington State Office of Archaeology and Historic Preservation (OAHP) and the City of Seattle Office of Historic Preservation (OHP) to outline the intended area of potential effect (APE) for historic and cultural resources. The APE for historic structures was determined to be 100 feet on each side of the proposed alternative footprints (i.e., a one-lot depth from the street right-of-way). In addition, the APE also includes the Admiral's Quarters located above the Elliott Bay Marina and the contiguous property of the Port of Seattle, which would include Piers 90 and 91 and the northernmost building on Pier 89. The APE for archaeological resources encompassed the footprints of construction for each alternative.

To identify existing resources, a pedestrian survey of areas of proposed ground disturbance and assessment of all buildings within the APE for historic structures was conducted. In addition, staff performed a literature search and recorded site review of potential sites and resources. Representatives from the Seattle Historic Preservation Program and City Intergovernmental Affairs Office were contacted to coordinate on ways to work with the tribes that should be consulted. It is anticipated that tribal consultations would include the Duwamish, Suquamish, and Muckleshoot tribes.

To evaluate impacts on historic resources, buildings and structures within the project APE that appeared to be significant under the criteria for listing in the NRHP were identified and photographed. These resources were documented with full architectural descriptions, and their significance under the criteria was determined. Also, the Air, Noise, Visual Quality, Land Use, and Traffic and Transportation discipline reports were reviewed to determine potential indirect impacts to historic structures, such as visual changes to the character and setting of the resource and traffic congestion or restricted access to the property.

The discussion herein of historic, cultural, and archaeological resources is based on the most recent (June 2006) version of the draft Historic, Cultural, and

Archaeological Resources Discipline Report. This Public Lands, Section 4(f) Discipline Report will be updated, as necessary, based on the results of the final Historic, Cultural, and Archaeological Resources Discipline Report.

Section 4(f) Recreation Resources

Descriptions of the park and recreation resources near the alternative alignments are provided below. No wildlife or waterfowl refuges are located in the study area. Historic resources, which are also Section 4(f) resources, are discussed in the following section. Facilities described in this report are in locations where either actual physical use of Section 4(f) resources or "constructive use" of the property needs to be evaluated. The resources included in this section are either within 500 feet of one or more of the alternative alignments or are in locations where their visual environment could potentially be affected by one or more of the alternative structures. The 500-foot distance is consistent with the effective distance for transportation noise modeling as recognized by FHWA.

Figure 11 shows the location of recreation, park, and bicycle/pedestrian facilities in the study area. Major parks in the Magnolia, Interbay, and Queen Anne areas include Discovery Park, Magnolia Park, the Interbay Athletic Complex (including the golf course and P-Patch), and Elliott Bay Park. In addition, the following park and recreation resources are located near the alternative alignments.

Smith Cove Acquisition Project

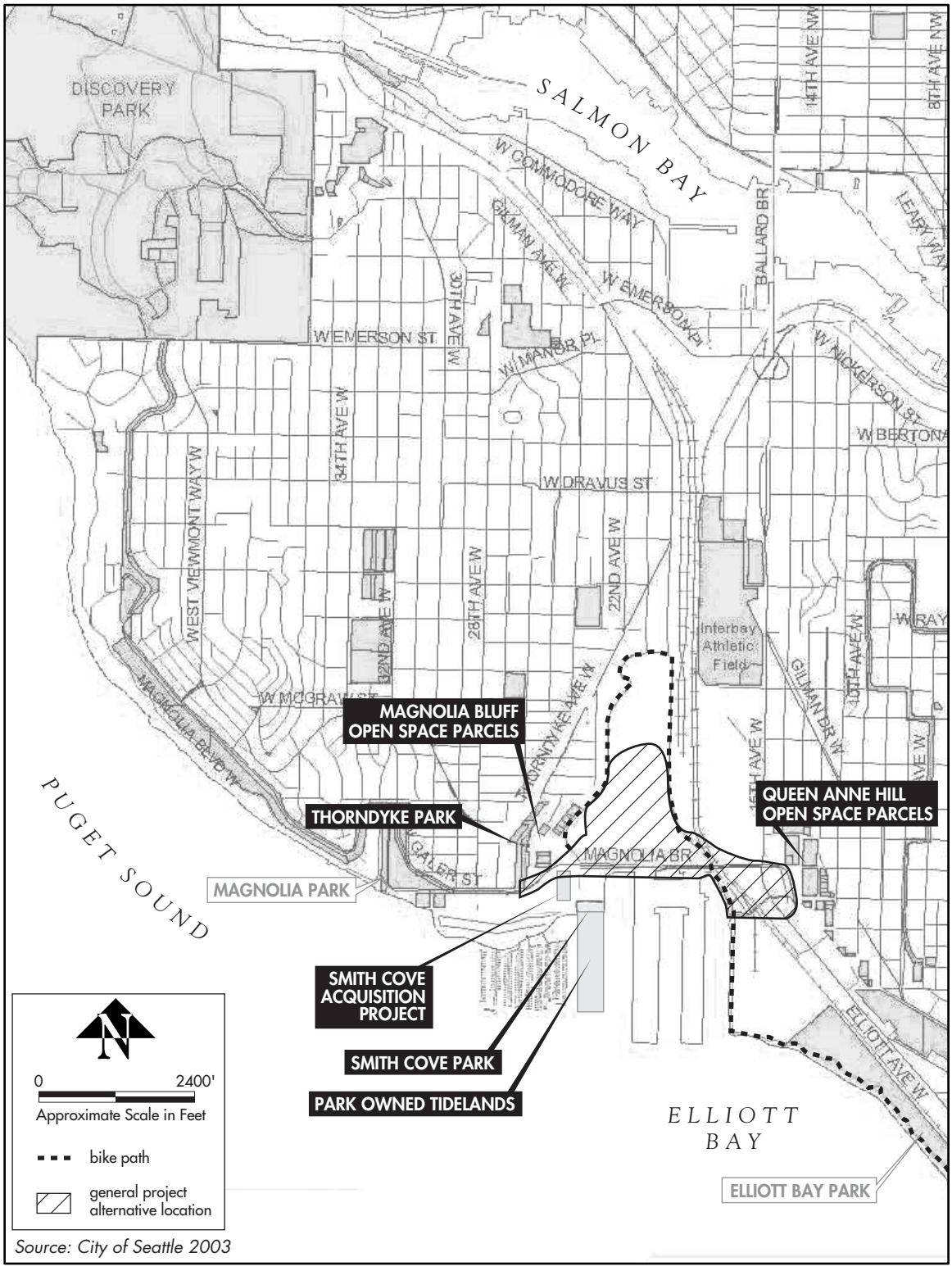
Location, Access, and Size

In November 2000, Seattle voters approved a $198.2 million levy (the Pro Parks Levy) designed to fund more than 100 parks and recreation projects all over the city. Funds from the Pro Parks Levy purchased U.S. Navy property to the south and at the western end of the Magnolia Bridge and to the west of 23rd Avenue West, referred to as the Smith Cove Acquisition Project, a neighborhood parks acquisition project.

On August 11, 2003, the Seattle City Council approved Ordinance Number 121250, authorizing the Superintendent of Parks and Recreation to acquire 7.3 acres of property from the U.S. Navy, to make appropriations to pay for this purchase, and to accept the property for park, recreation, transportation and open space purposes. The acquired property at Smith Cove has two separate areas. The upper site is composed of 2.4 acres of property immediately south of West Galer Street on Magnolia Hill west of the existing Magnolia Bridge. The upper site includes five parcels – parcels A through E (See Figure 12 and Table 1). Parcel G illustrated in Figure 12 remains in U.S. Navy ownership.

The lower site is composed of 4.9 acres of property along 23rd Avenue West at the southeast foot of Magnolia Hill between the Magnolia Bridge and the Elliott Bay Marina. The lower site encompasses all of Parcel F. Access to the lower site is provided directly from 23rd Avenue West.

According to City Ordinance Number 121250, the portion of Parcel F within the boundaries of the existing Magnolia Bridge right-of-way maintains its transportation functions through an easement to SDOT (City of Seattle 2003b). The existing bridge ranges in height from approximately 80 feet to approximately 105 feet from east to west over Parcel F. Overall, the SDOT easement for the bridge occupies approximately 17,600 square feet of the parcel. Because of the closely spaced



Source: City of Seattle 2003

Figure 11
Park, Recreation, and Bike Facilities

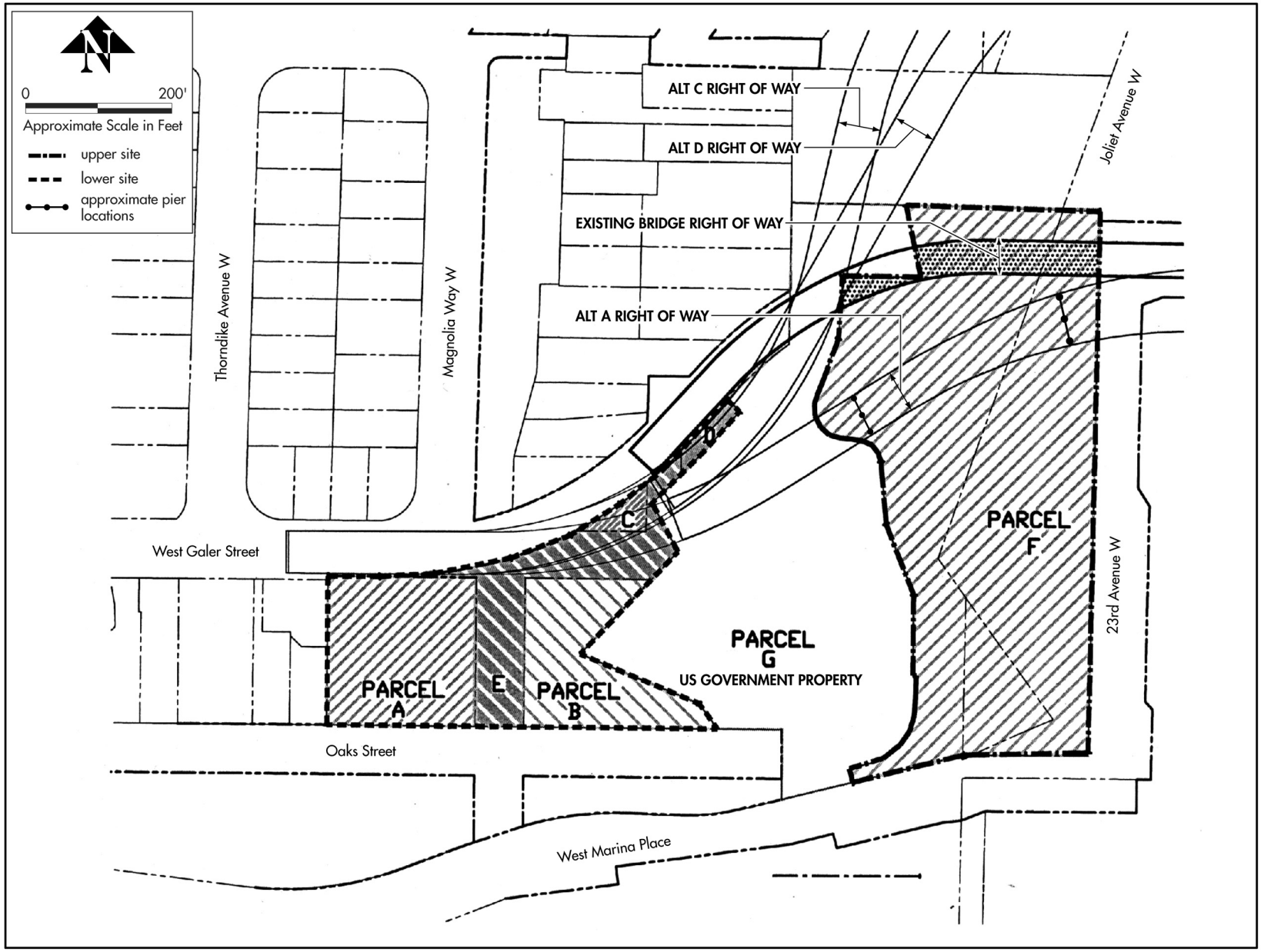


Figure 12
Smith Cove Acquisition Project Parcels

existing bridge piers and columns, the land under the bridge is not currently usable for park and recreation purposes.

Table 1
Smith Cove Acquisition Project

Acquired Parcels	Square Feet	Acreage
Upper Site		
Parcel A	40,000	0.9
Parcel B	31,033	0.7
Parcel C	2,774	0.06
Parcel D	2,014	0.05
Parcel E	30,422	0.7
Subtotal Upper Site:	106,243	2.4
Lower Site		
Parcel F	214,638	4.9
Subtotal Lower Site:	214,638	4.9
Total Acreage Acquired	320,881	7.3

Source: City of Seattle 2003b.

Function and Activities

The upper site was opened to the public in April 2004 and was named the Ursula Judkins Viewpoint in April 2005. The site has pedestrian access from West Galer Street. Bollards prevent vehicle access into the viewpoint. The lower site opened to the public in May 2006 under interim development as an open-use playfield. Some underground utilities in this area that have surface access or aboveground features have been relocated and pavement in the northern portion of the site has been removed. About three acres of the site have been planted with turf.

Smith Cove Park and Public Waterfront Access

Location, Access, and Size

A small public waterfront access area, called Smith Cove Park at Terminal 91, is located along the Elliott Bay shoreline approximately 1,000 feet southeast of the western end of the existing bridge. The Port of Seattle provides this shoreline access, although Seattle Parks and Recreation owns the tidelands south of Smith Cove Park (see discussion under Other Land, below). The public waterfront area is accessible from 23rd Avenue West via the Magnolia Bridge and is separated from upland properties by 23rd Avenue West/West Marina Place. Port of Seattle property (Terminal 91 West Yard) currently used for storage of marine business-related material is located to the north of the park. The Elliott Bay Marina is situated to the west.

Function and Activities

Smith Cove Park is a moderately used neighborhood park. The park provides public shoreline access, benches, picnic tables, and views of Elliot Bay, but does not provide for high use and organized activities.

Thorndyke Park and the Boulevard System

Location, Access, and Size

Thorndyke Park is a city-owned park that is 1.4 acres in size. The park is located between Thorndyke Avenue West and Magnolia Way West approximately 1,200 feet north of the western end of the existing bridge. Adjacent streets are part of Seattle's boulevard system and are owned by Seattle Parks and Recreation. Streets in the area designated as park boulevard streets include portions of West Galer Street, Magnolia Way West, and Magnolia Boulevard West. Seattle Parks and Recreation has established Non-Park Use of Park Lands policies, which were endorsed by a City Council resolution in October 1996 (Seattle Parks and Recreation 1996). These policies define a boulevard as "a linear park, established by ordinance, usually an extension or expansion of a dedicated street(s) which continues to serve as a right-of-way in addition to being park land."

Magnolia Way West and Magnolia Boulevard West extend to their southern intersection with West Galer Street. The West Galer Street boulevard extends to its eastern intersection with Magnolia Way West.

These boulevards provide vehicular, pedestrian, and bicycle access to Thorndyke Park as well as the Magnolia Bridge. Thorndyke Park and the boulevards are primarily adjacent to single-family residences, with some low-rise multifamily residential structures located to the north.

Function and Activities

Thorndyke Park is a moderately used neighborhood park and does not contain any formal recreation facilities. Boulevard streets provide vehicle, bicycle, and pedestrian circulation in the area. No new facilities are currently planned for the park.

Terminal 91 Bicycle Path

Location, Access, and Size

A 4,000-foot-long, limited access, paved bicycle path runs along the east, north, and west borders of the Port of Seattle North Bay Property. This path is primarily on property owned by the Port of Seattle with some portions crossing designated City of Seattle street right-of-way. Bike lanes connect to West Dravus Street to the north, Smith Cove Park and the marina to the southwest, and to Elliott Bay Park, which includes the Elliott Bay Trail and Myrtle Edwards Park to the south.

Function and Activities

The bike path provides a travelway for pedestrians and bicyclists that is separated from motor vehicles. No improvements are currently planned for this path.

Other Land

Seattle Parks and Recreation owns a number of parcels in the project vicinity. These parcels are undeveloped park property located on steep slopes or in the water. These properties include the following.

- Seattle Parks and Recreation owns 10 parcels totaling 2.75 acres along the eastern bluff of Magnolia. The parcels, along with privately owned land, make up the greenbelt area along the Magnolia hillside.
- Seattle Parks and Recreation also owns approximately 20 parcels on Queen Anne Hill east of the eastern Magnolia Bridge ramp. The greenbelt on the hill comprises these Seattle Parks and Recreation-owned parcels and SDOT street right-of-way. Land immediately adjacent to the eastern bridge ramp is under SDOT jurisdiction and includes the portion of the hillside recently secured to prevent landslides.
- Seattle Parks and Recreation also own the tidelands south of Smith Cove Park at North Bay/Terminal 91. These city-owned lands are approximately 440 feet wide and extend approximately 1,500 feet into Elliott Bay. They provide fish and wildlife habitat. No other facilities or amenities are associated with the tideland parcel.

Section 4(f) Historic, Cultural, and Archaeological Resources

Archaeological Properties

Cultural resources staff conducted field investigations in September 2003 to identify archaeological resources along each alternative alignment. The archaeological evaluation included a pedestrian survey of the footprint of each alternative. Most of the study area was paved, and little ground surface was visible. Limited subsurface archaeological investigations were undertaken in February and March 2006. No archaeological resources were identified. However, because less than 10 percent of the study area was investigated for archaeological resources and the subsurface testing was limited, unknown archaeological resources could be present in the study area.

Historical Properties

Federal regulations require all buildings that are more than 50 years old to be evaluated for the NRHP. Assessment of NRHP significance entails evaluating cultural properties under the following criteria listed in 36 CFR 60.34.

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association, and:
>
> a. that are associated with events that have made a significant contribution to the broad pattern of our history; or
>
> b. that are associated with the lives of persons significant in our past; or
>
> c. that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> d. that have yielded or are likely to yield, information important in prehistory or history.

The Seattle Landmarks Preservation Ordinance establishes additional policies. Any object, site, or structure that is more than 25 years old can be designated as a landmark if it has significant character, interest, or value as part of the heritage of the city, state, or nation. Buildings or structures that meet the minimum age requirements for significance are referred to as "historical;" those that are significant are referred to as "historic."

Cultural resources staff conducted field investigations to identify significant historic structures in the APE. Figures 13 through 17 show the general locations of historic resources in the study area and their relation to the project alternatives. Twenty historical structures were identified during the field survey. Based on this survey, four structures appear to meet the criteria for listing in the NRHP. One additional structure appears to meet City of Seattle landmark eligibility criteria. These properties are described in more detail below.

Cultural resources staff assigned building numbers in the field to each historical structure identified. Some buildings originally evaluated and assigned a building number were later dropped from further consideration if they did not meet the minimum age requirements for qualification as a landmark.

Building 3

Location, Access, and Size

Building 3, formerly owned by the U.S. Navy and now owned by Pacific Northwest Communities, is located along the bluff above Smith Cove and south of the Magnolia Bridge. This two-story building, built in 1944, is 8,500 square feet in size and is accessed via a private driveway that passes under the existing bridge. The building site remains under U.S. Navy ownership. A rolling chain-linked fence surrounds the Navy property.

Function and Activities

Building 3, which appears to meet criterion "c" for listing in the NRHP, functioned as a U.S. Navy Admiral's place of residence.

Building 5

Location, Access, and Size

Building 5 is located on Port property immediately north of the Magnolia Bridge and west of the City Ice storage buildings. Building 5, built in 1930, has a building footprint of approximately 58,000 square feet. This structure is accessed via either the Terminal 91 Main Gate at the mid-bridge center-lane ramps (for vehicular and small truck traffic) or the East Gate at the north end of Pier 90 at Alaskan Way West (for vehicular and heavy truck traffic).

Function and Activities

Building 5, which appears to meet criterion "c" for listing in the NRHP, houses a seafood processing business operated by Independent Packers, who leases the building from the Port.

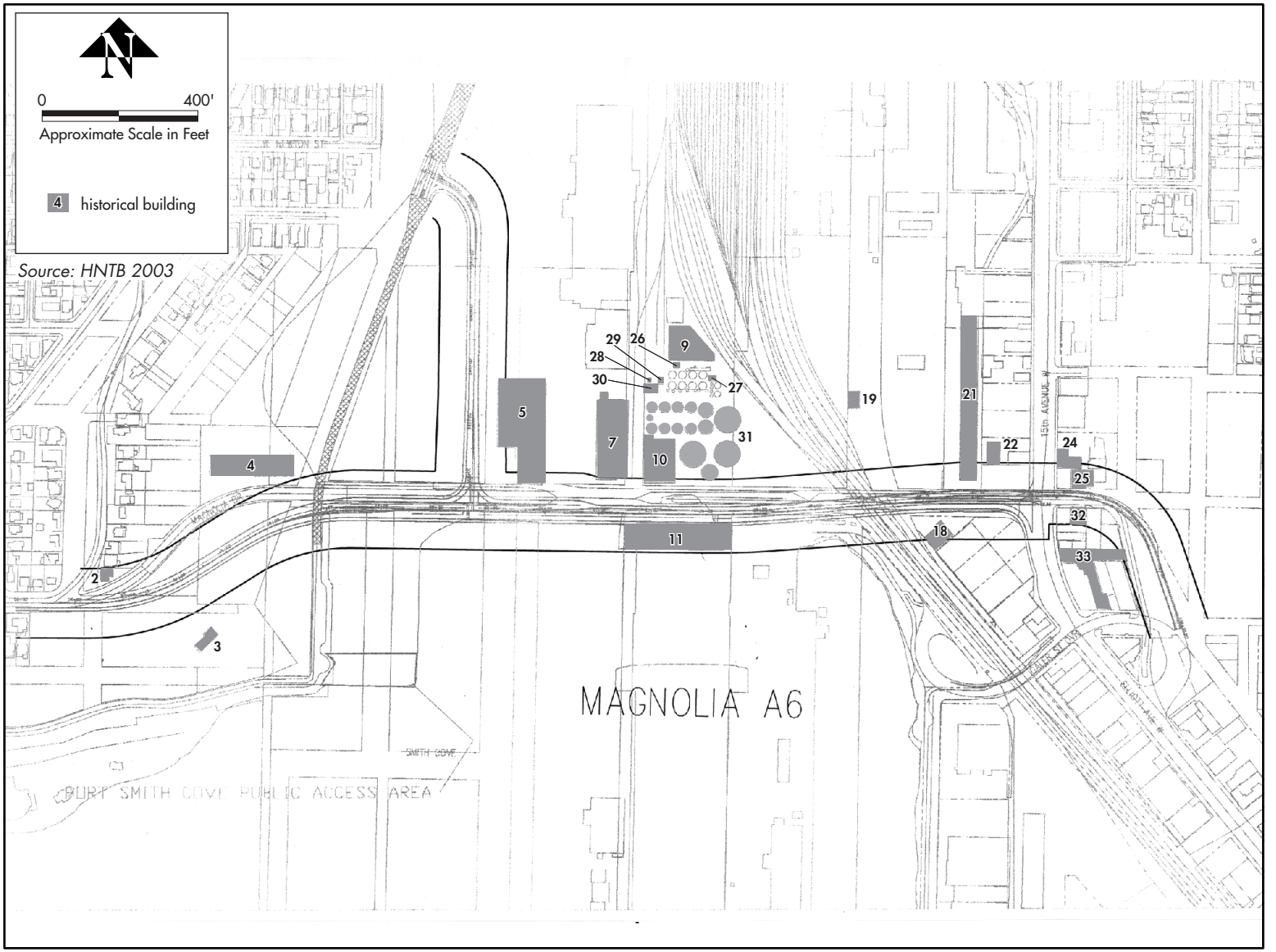


Figure 13
Historic Resources, Alternative A - Intersection

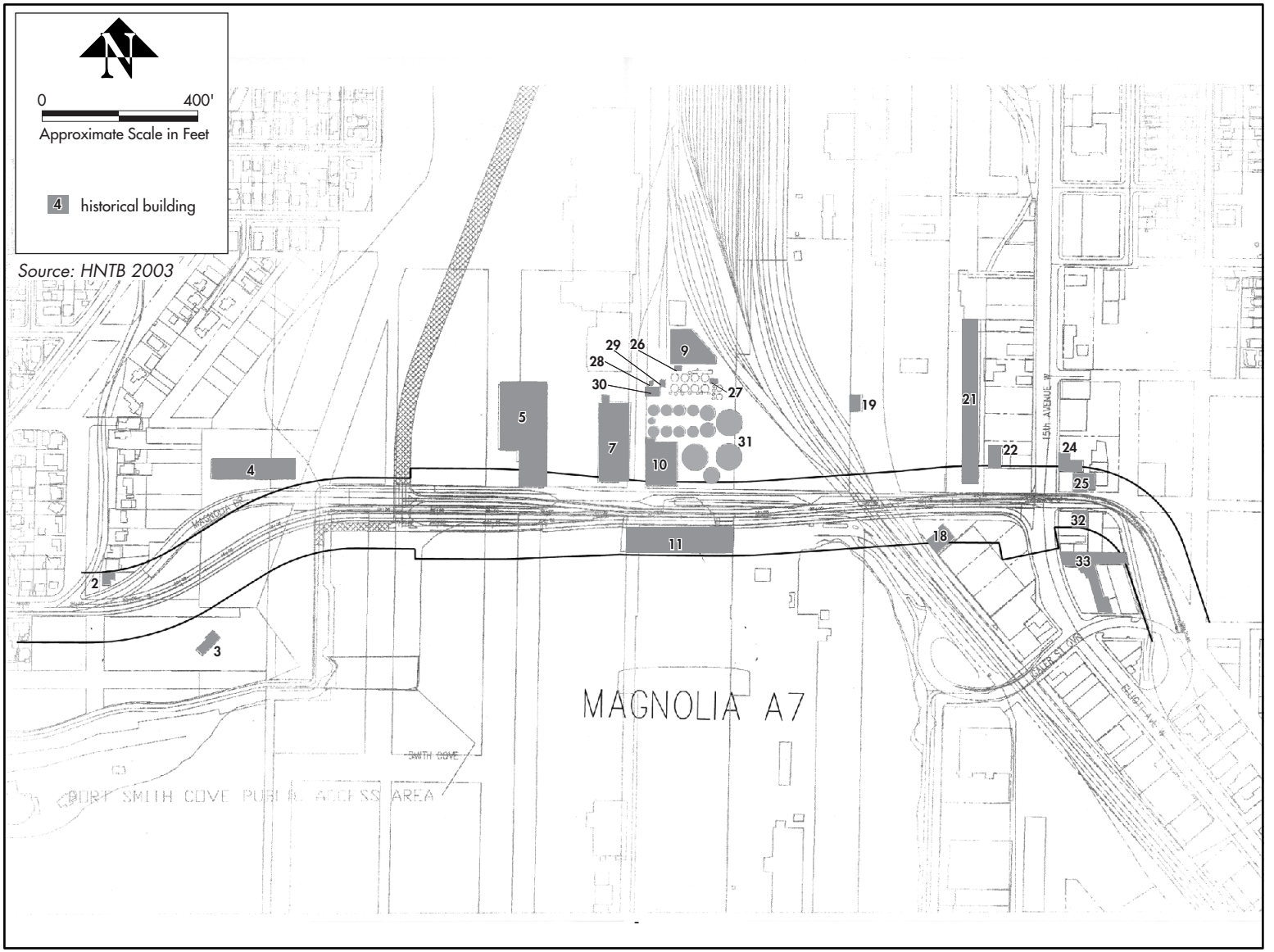


Figure 14
Historic Resources, Alternative A - Ramps

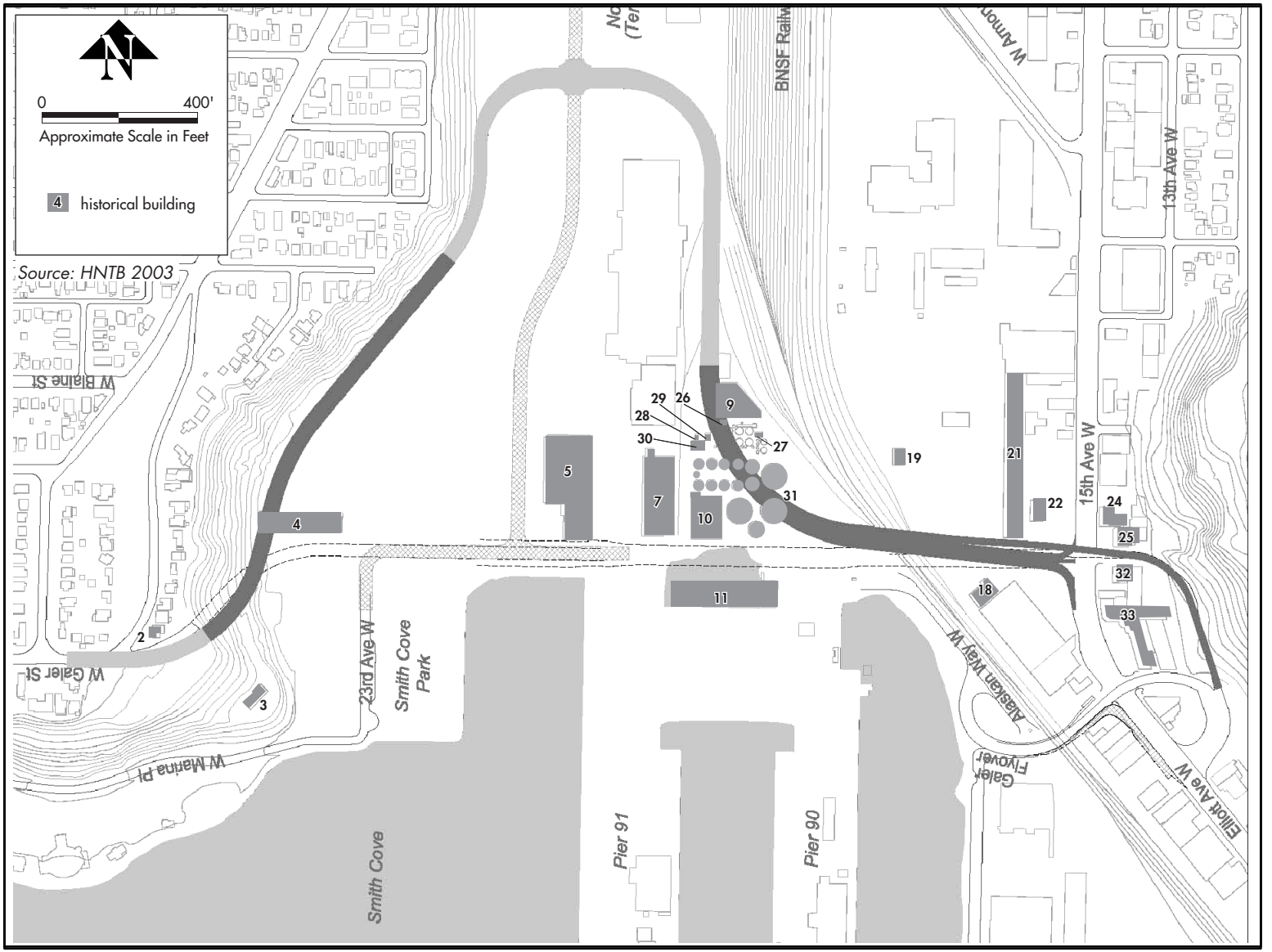


Figure 15
Historic Resources, Alternative C

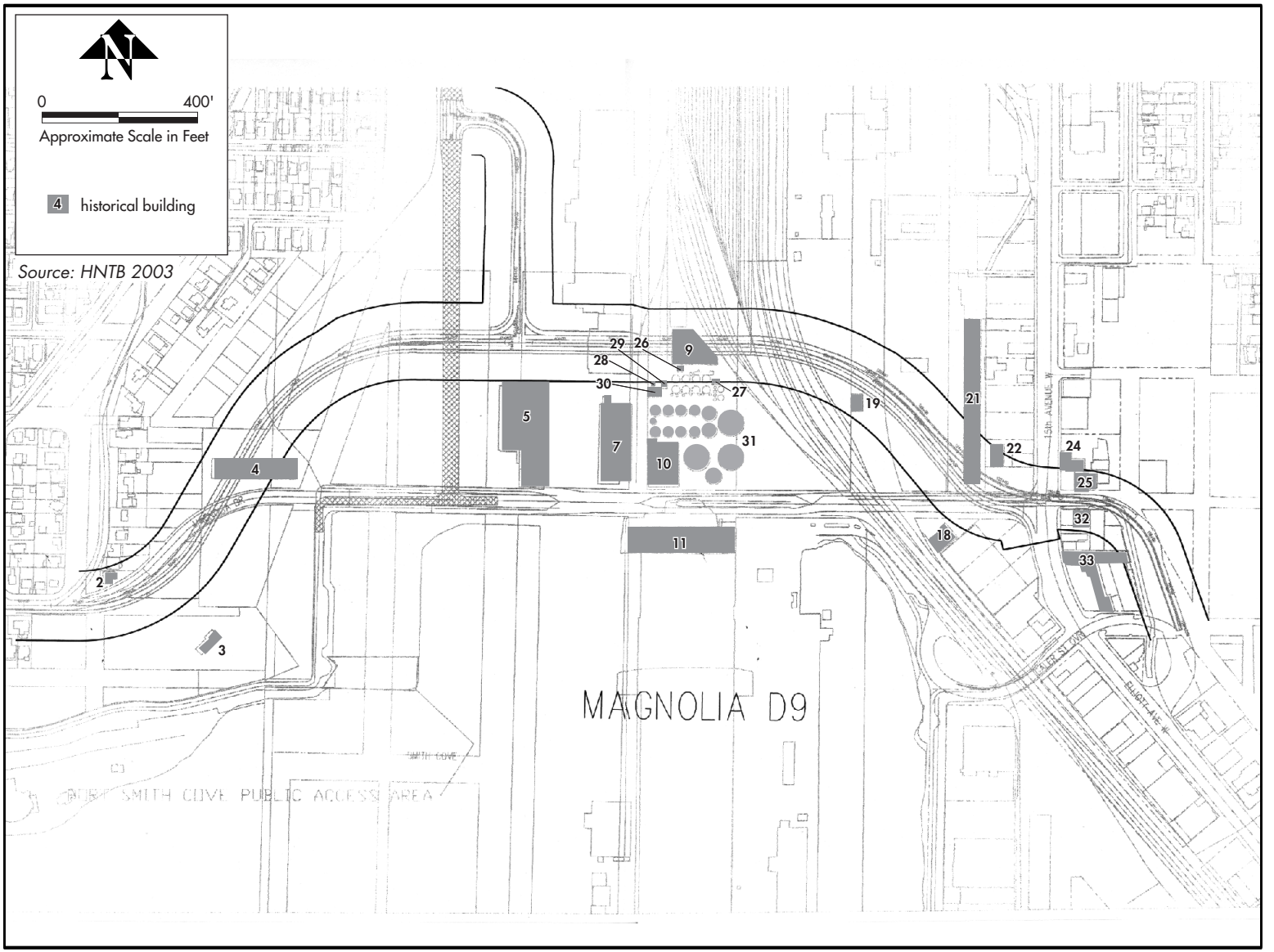


Figure 16
Historic Resources, Alternative D - Intersection

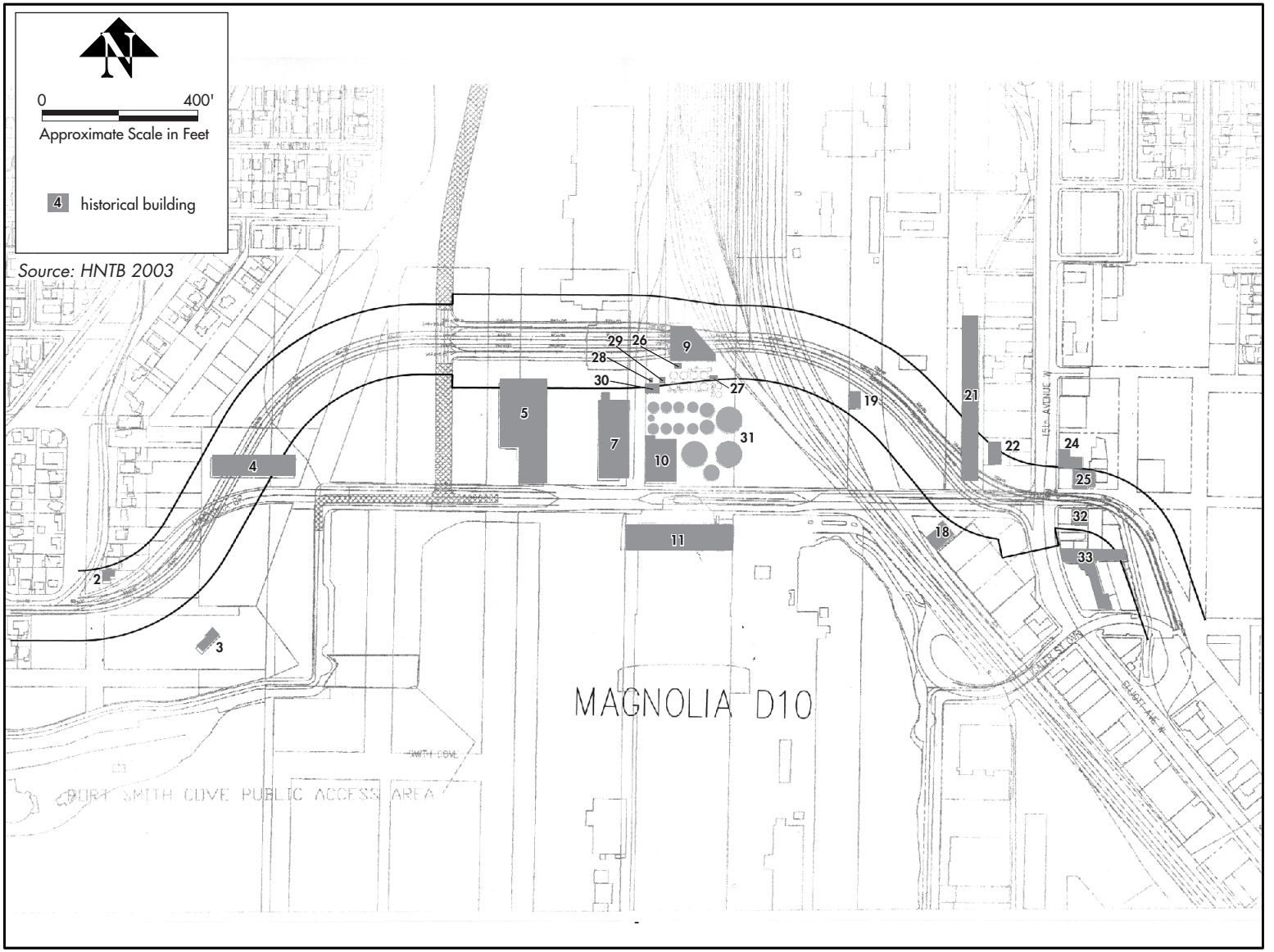


Figure 17
Historic Resources, Alternative D - Ramps

Building 9

Location, Access, and Size

Building 9 is located on Port property adjacent to and west of the Burlington Northern Santa Fe (BNSF) railroad tracks and north of the Terminal 91 Tank Farm (the former Texas Oil refinery). Building 9, built in 1925, is approximately 15,300 square feet in size and is accessed via the Terminal 91 Main Gate or East Gate.

Function and Activities

Building 9, built in 1925, appears to meet criterion "c" for listing in the NRHP. The primary function of Building 9 is to store, repackage, and distribute lubricants and fuels. Snider Petroleum, a petroleum distributor, has a lease from the Port for Building 9 until 2007.

Building 17

Location, Access, and Size

Building 17 is located at 1280 16th Avenue West. Built in 1966, Building 17 is approximately 42,270 square feet in size, and is accessed from Alaska Way West via the Galer Flyover.

Function and Activities

Building 17, which appears to meet City of Seattle landmark eligibility criteria, functions as an office building and is owned and operated by the Amgen Corporation.

Building 27

Location, Access, and Size

Building27 is located on Port property south of Building 9 and is associated with the Terminal 91 Tank Farm. The building was built in 1929 and has an area of approximately 480 square feet. This building is accessed via the Terminal 91 Main Gate or East Gate.

Function and Activities

The building appears to meet criterion "a" for listing in the NRHP. Building 27 is vacant. Building 29 is a 520-square-foot one-story metal shed with corrugated metal roofing; this building functions as the Tank Farm office and shop. Building 30 is a 1,320-square-foot one-story brick structure with corrugated aluminum roofing that functions as a fuel pump house (Port of Seattle 2004).

In March 2004, the Port of Seattle issued a State Environmental Policy Act (SEPA) Determination of Non-Significance (DNS) on its proposal to demolish the Tank Farm and associated buildings and structures within the Tank Farm footprint at Terminal 91 (Port of Seattle 2004). In addition to the tank structures, three small operating structures near Building 27 were demolished in 2005.

Studies and Data Sources

Documents and data sources reviewed for this report include:

- City of Seattle GIS data for parcels and parks in the study area.
- The Seattle Parks and Recreation Plan 2000.
- Interviews with representatives from Seattle Parks Department.
- Magnolia Bridge Replacement Project – Draft Historic, Cultural, and Archaeological Resources Discipline Report (June 2006)
- Library and archival sources for background information on prehistoric and ethnohistoric use of the area, including archaeological site forms, cultural resource reports, maps, historic inventory forms, and NRHP nomination forms archived at OAHP in Olympia, Washington.
- Literature, reports, and maps on file at the University of Washington, the Seattle Public Library, the Museum of History and Industry, Puget Sound Archives, King County, and the Seattle Landmark Office.
- Historic primary source materials to assess the potential for archaeological resources and to research historical contexts, including Sanborn fire maps, General Land Office (GLO) maps, King County Tax Assessor rolls, R. L. Polk and Company city directories, newspapers, and historic photographs.
- 7.5-minute quadrangle maps of the study area and geotechnical boring logs for geomorphic features and areas of potential archaeological and historical sensitivity.
- Interviews and meetings with representatives from OAHP, OHP, SDOT, and the City Intergovernmental Affairs Office.

Major Assumptions

Section 4(f) Recreation Resources

Because the project alternatives would not create additional traffic capacity, this analysis assumes that the alternatives would not induce population or housing growth in the study area and would not create additional demand for public use of park and recreation facilities. The study area is expected to grow at less than 1 percent per year as allowed by current City of Seattle land use plans and zoning (Puget Sound Regional Council 2003). The same amount of growth would occur under the No Build Alternative and all Build Alternatives.

Section 4(f) Historic, Cultural, and Archaeological Resources

Geologic processes have affected the prehistoric landscape in the Smith Cove area. For example, rising sea levels around 5,000 Before Present may have submerged cultural sites located along the shoreline, while landslides along the eastern edge of the Magnolia Bluff may have buried sites. Cultural processes also have implications

for cultural resources. For example, during the historic period when the Smith Cove tidelands were filled in, the landscape was irreversibly changed, and early evidence of human activities was buried under almost 30 feet of fill. The implications of these events have influenced the ability to identify visible cultural materials in the project area; therefore, this analysis assumes that cultural sites and materials could be present in the subsurface. Limited subsurface investigation was done in February and March 2006 by mechanical core sampling and test pits along the Alternatives A and D alignments. No archaeological resources were identified, but the presence of unknown archaeological deposits elsewhere in the APE cannot be ruled out.

In July 2004, the City's Department of Planning and Development approved the Port's Terminal 91 tank farm project (City of Seattle 2004). The buildings and structures proposed for demolition on Port property have been removed, leaving four buildings in the study area that appear to meet the criteria for listing in the NRHP. These are considered in the following evaluation.

No Build Alternative

Under the No Build Alternative, the existing Magnolia Bridge would not be replaced. No adverse impacts to lands identified as Section 4(f) resources would occur that would constitute "use" or "constructive use" of such resources.

Alternative A

Smith Cove Acquisition Project

Alternative A would require construction of the new bridge over portions of four of the six parcels at Smith Cove acquired by the City of Seattle from the U.S. Navy in August 2003 for park and transportation purposes. This acquisition occurred after the initial alternative screening process, which began in the fall of 2002, and after the EIS scoping period (spring of 2003), for the Magnolia Bridge Replacement Project. Because SDOT and Seattle Parks and Recreation have established a Joint Development Agreement consistent with Section 14 of the FHWA Section 4(f) Policy Paper (Appendix A), the acquisition of portions of these parcels will be exempt from Section 4(f) requirements (FHWA 1987). The following analysis, therefore, is provided to describe the effect of Alternative A on the parcels, analyze the potential for "constructive use," and provide context for the development requirements included in the Joint Development Agreement. See the Operational Mitigation section for discussion of features of the Joint Development Agreement.

Land Acquisition

Table 2 identifies the approximate area of right-of-way taken from each acquired parcel by alternative. Over Parcel F, the bridge height would vary from approximately 85 to 110 feet from east to west and would be located over approximately 25,645 square feet (0.59 acre) of the parcel. The bridge width over the parcel would be about 60 feet. The new bridge would require location of two piers within Parcel F. Preliminary design concepts call for the piers to be spaced 360 feet apart and to each have a single rectangular column. The total area required to contain the two piers within Parcel F would be no more than 200 square feet (0.005 acre). Area under the bridge, between the piers, could be used for park and recreation purposes. Figure 12 shows the approximate locations of the piers.

The new bridge under Alternative A would be located over 2,874 square feet (0.07 acre) of Parcel C and 4,992 square feet (0.11 acre) of Parcel E. Over these parcels, the bridge would be at or close to grade and would occupy the entire area beneath the bridge. The area under the bridge at this location would not be usable for park and recreation purposes.

As shown in Table 2, Alternative A would be located over a total of 33,531 square feet (0.77 acre) of existing parkland owned and maintained by Seattle Parks and Recreation. The existing Magnolia Bridge easement over Parcel F occupies 17,622 square feet (0.40 acre) of land. This street easement could be transferred to Seattle Parks and Recreation in exchange for an easement over Parcel F to accommodate Alternative A. The existing bridge easement could then be redeveloped over time for

park and recreation purposes. This exchange would reduce the net direct impact of this alternative from 33,531 square feet (0.77 acre) to 15,909 square feet (0.37 acre). In addition, because only approximately 200 square feet (0.005 acre) of Parcel F (or less than one percent of the total required easement from Parcel F) would be required to accommodate the proposed overhead bridge support columns, the remainder of the area under the bridge could continue to be used for recreational activities, resulting in an overall net gain of useable parkland.

Table 2
Smith Cove Acquisition Project
Section 4(f) Park Property Area of Take

Parcel	Alternative A		Alternative C		Alternative D	
	(sq ft)	(acres)	(sq ft)	(acres)	(sq ft)	(acres)
A	0	0	0	0	0	0
B	0	0	0	0	0	0
C	2,874	0.07	2,774	0.06	2,774	0.06
D	20	0.00	2,014	0.05	2,014	0.05
E	4,992	0.11	8,474	0.19	7,467	0.17
Upper Site Subtotal	7,886	0.18	13,262	0.30	12,255	0.28
F	25,645	0.59	151	0.003	456	0.01
Lower Site Subtotal	25,645	0.59	151	0.003	456	0.01
Total	33,531	0.77	13,413	0.31	12,711	0.29
Existing Bridge Offset	17,622	0.40	17,622	0.40	17,622	0.40
Total Area of Take	+15,909	0.37	-4,209	-0.10	–4,911	–0.11

Source: Scott, pers. comm., 2003 ; Brower, pers. comm., 2004.
HNTB, December 2006.

Access

Access to the lower site is provided directly from 23rd Avenue West. Alternative A would relocate the bridge structure south of its existing location over the lower site and would bisect the area proposed for turf activities. However, only approximately 200 square feet of the lower site would be required to accommodate the proposed overhead bridge support columns, and their placement is not anticipated to adversely affect existing or future access to planned park and recreation activities on this site. Vehicles, bicyclists, and pedestrians would still be able to directly access the site from 23rd Avenue West. This bridge location would not constitute “constructive use” of Section 4(f) property because access would not be restricted such that the activities and attributes of the lower site would be substantially impaired or diminished.

Access to the upper site is provided directly from West Galer Street. The loss of 0.18-acre of parkland at the upper site would occur in the area immediately south of the existing bridge right-of-way. Loss of this parkland would not impede access to other portions of the upper site from West Galer Street. This bridge location would not constitute “constructive use” of Section 4(f) property because access would not be restricted such that the activities and attributes of the upper site would be substantially impaired or diminished.

Aesthetics

Under Alternative A, the bridge over the lower site would bisect the area proposed for turf activities. The structure in this location would be a more visible presence to users of the turf area than under existing conditions. However, as described above, only approximately 200 square feet of the lower site would be required to accommodate the proposed overhead bridge footings. The aesthetic effect would not constitute "constructive use" of Section 4(f) property because aesthetic attributes of the lower site would not be substantially impaired or diminished.

Under Alternative A, the remaining portions of the upper site would continue to provide views of the city and waterfront. The aesthetic attributes and related activities associated with the upper site would, therefore, not be substantially impaired or diminished, and "constructive use" of Section 4(f) property would not occur.

Air Quality

Air quality modeling for this project (see the Air Quality Discipline Report) shows that carbon monoxide (CO) concentrations at all intersections in the study area would drop in the future and would continue to meet all applicable ambient air quality standards in 2010 (year of opening) as well as in 2030 (design year). CO concentrations would drop because predicted decreases in vehicle emissions would offset the forecast increases in traffic levels. Since the concentrations at the modeled intersections represent the highest predicted concentrations of CO, no air quality impacts are anticipated in the vicinity of the park properties. Alternative A, therefore, would not constitute "constructive use" of Section 4(f) property because no air quality impacts have been identified that would substantially impair or diminish the activities or attributes of the park properties.

Noise

Noise modeling for this project (see the Noise Discipline Report) indicates that noise levels in 2030 could increase by 1 to 4 decibels (dBA) at all receivers analyzed compared to existing conditions because of increases in traffic volumes. Noise thresholds would be exceeded at some receivers located at the west end of the bridge in 2030, but these noise levels would occur under the No Build Alternative as well as the build alternatives. The increase in traffic noise levels would result from the growth in traffic volumes through 2030 across Magnolia Bridge and surrounding streets and would be achieved even if the project were not constructed. Substantial localized noise impacts have not been identified and no "constructive use" of Section 4(f) property would occur.

Water

Alternative A includes installation of stormwater conveyance and treatment facilities. Application of stormwater treatment prior to discharge through an existing outfall would result in a net-benefit to water quality in the area because no treatment facilities are currently in place. Therefore, no impacts related to water quality have been identified that would constitute "constructive use" of Section 4(f) property or that would substantially impair or diminish the activities or attributes of the park properties.

Land Use in Vicinity

Adjacent land uses in the vicinity of the lower site include Port property used for marine storage and Smith Cove Park to the east, Smith Cove Tidelands and Elliott Bay Marina to the south, U.S. Navy property (Parcel G) to the west, and industrial Port property with a warehouse and surface storage to the north. The existing Magnolia Bridge crosses east-west over the far northern portion of the lower site. The upper site is surrounded by vacant open space to the south, single-family residential uses to the west and north, and U.S. Navy Parcel G to the east. The existing bridge is located along the northern boundary of the upper site.

Alternative A would not adversely affect land uses in the vicinity of the Smith Cove Acquisition Project parcels. Alternative A is designed to avoid residential displacements and would not otherwise restrict or substantially impair the use and enjoyment of nearby residential parcels or other nearby park property such as Smith Cove Park. In fact, the Alternative A – Intersection option would provide more direct access to Smith Cove and the Elliott Bay Marina for some Magnolia residents than under existing conditions. Furthermore, Alternative A would not induce population or housing growth in the study area and would not create additional demand for public use of park and recreation facilities.

Functions of or Available Activities on Property

Current plans for the lower site (Parcel F) are to develop a turf area and parking lot to accommodate passive and non-organized park activities. Alternative A would relocate the bridge south of its existing location over the lower site and would bisect the area proposed for turf activities. Compared to existing conditions, there would be a net increase of an additional 0.18 acre required to accommodate the new bridge right-of-way over the lower site after the existing bridge is demolished. However, only approximately 200 square feet of the lower site (or less than one percent of the total new right-of-way area required from Parcel F) would be required to accommodate the proposed bridge support columns, and their placement is not anticipated to substantially impair planned park and recreation activities on this site.

The present function of the upper site is undeveloped open space, although this site is proposed for development as a public viewpoint area. The loss of 0.18 acre of parkland at the upper site (approximately 7 percent of the total upper site acreage) would occur immediately south of the existing bridge right-of-way. Loss of this parkland would not impede access to or degrade other potions of the upper site that provide views of the city and waterfront. Therefore, Alternative A would not severely impair or restrict the use and enjoyment of this site for potential future viewing opportunities.

Avoidance Alternatives

Analysis of avoidance alternatives is not required because the Joint Development Agreement between SDOT and Seattle Parks and Recreation exempts acquisition of portions of the Smith Cove Acquisition parcels from Section 4(f) requirements (FHWA 1987). Nevertheless, alternatives that would avoid new construction at the west end of the Magnolia Bridge and resulting construction over portions of the Smith Cove Acquisition Project parcels were considered in the *Magnolia Bridge Replacement Draft Alignment Study Report* (HNTB Corporation 2003) but not advanced for further environmental review. These alternatives are briefly

summarized here to provide a context for establishing the Joint Development Agreement.

Alternatives evaluated in the *Alignment Study Report* included a number of variations of either replacing the existing bridge in the same place or constructing a bridge or surface road north of the existing structure that would connect with Thorndyke Avenue West. These alternatives were not considered further because they would have other impacts that would not make them prudent to implement. Such impacts included residential displacements, additional business displacements, changes in traffic flow that would create substantial community disruptions, and bridge closure during construction for up to 4 years. Please see the *Alignment Study Report* for additional information.

Terminal 91 Bicycle Path

The eastern and western segments of the Alternative A bridge structure would cross over the Terminal 91 bicycle path at two locations. No direct "taking" of this bicycle path would occur. Given that Alternative A would not create additional traffic capacity, and that the bicycle path already crosses under the existing Magnolia Bridge, Alternative A would not result in "constructive use" impacts such as increased noise levels, compromised aesthetic features, restricted access, or air quality degradation of a magnitude or nature that would substantially impair this bicycle path's activities, features, or attributes.

Local Greenbelts

The eastern and western approaches of the Alternative A alignment would be located near undeveloped land (greenbelts) on the Magnolia and Queen Anne hillsides owned by Seattle Parks and Recreation. No direct "taking" of these greenbelt properties would occur. Given the distance between the proposed bridge and these park properties, Alternative A would not result in "constructive use" impacts such as increased noise levels, compromised aesthetic features, restricted access, or air quality degradation of a magnitude or nature that would substantially impair these greenbelts' activities, features, or attributes.

Boulevard System

The western end of the bridge would tie into the boulevard-designated portion of West Galer Street. Reconstruction of a portion of West Galer Street would be required, but additional lanes are not proposed that would require additional use of boulevard property. Construction within the boulevard-designated portion of West Galer Street would be no more than the minimum necessary to connect to the bridge and would not result in a change from existing conditions. Reconstruction of the roadway without expansion would not be considered use of Section 4(f) property. Furthermore, this alternative is not expected to result in access, aesthetic, air quality, noise, or water quality/quantity-related "constructive use" impacts on this Section 4(f) resource.

Parkland Demand

Because Alternative A would not create additional traffic capacity for access to Magnolia, the project would not induce population and housing growth in the study

area. No additional demand on park and recreation facilities would occur under Alternative A compared to the No Build Alternative.

Historic, Cultural, and Archaeological Resources

Under Alternative A, none of the potential historic structures would be displaced or physically altered.

The new bridge would be visible from all four properties that appear to meet the criteria for listing in the NRHP. Potential indirect effects would result from visual changes caused by the introduction of the new bridge into the surrounding built environment. However, replacement of the bridge with a similar structure would not change the visual character of the existing industrial setting of these four properties. Any visual changes would not be of a magnitude or nature that would substantially impair the historic integrity that renders these sites potentially eligible for the NRHP.

Alternative A would not result in other "constructive use" impacts caused by traffic congestion or restricted access to the properties, air quality degradation, or excessive noise and vibration levels that would be out of character with the historic resources or would otherwise substantially impair these properties' historic features or attributes.

Alternative C

Smith Cove Acquisition Project

Alternative C would require construction of the new bridge over four of the six former U.S. Navy parkland parcels at Smith Cove. Because SDOT and Seattle Parks and Recreation have established a Joint Development Agreement consistent with Section 14 of the FHWA Section 4(f) Policy Paper (Appendix A), acquisition of portions of these parcels will be exempt from Section 4(f) requirements (FHWA 1987). The following analysis, therefore, is provided to describe the effect of Alternative C on the parcels, analyze the potential for "constructive use," and provide context for the development requirements in the Joint Development Agreement.

Land Acquisition

As shown in Table 2, the bridge would be located over approximately 13,262 square feet (0.3 acre) of the upper site (Parcels C, D, and E). Over those parcels, the bridge would be at or close to grade and would occupy the entire area beneath the bridge. None of that area would be usable for park and recreation purposes.

Under Alternative C, the bridge would be located over a 151-square-foot (0.003-acre) corner of Parcel F, which is currently designated as a SDOT easement for the existing bridge. At that location, the bridge would be at a height of approximately 90 feet. No piers would be located within Parcel F, and all of the parcel could be used for park and recreation purposes.

In total, Alternative C would be located over a total of approximately 13,413 square feet (0.31 acre) of existing parkland owned and maintained by Seattle Parks and Recreation. Removing the existing Magnolia Bridge easement over Parcel F would result in 17,622 square feet (0.4 acre) of land that could be transferred to Seattle

Parks and Recreation and redeveloped over time for park and recreation purposes. Therefore, the net direct benefit under Alternative C would be an additional 4,209 square feet (0.1 acre) of city-owned parkland.

Access

Alternative C would relocate the bridge structure north of its existing location over the lower site and would remove a physical barrier (i.e., the existing Magnolia Bridge) that bisects and partially impedes full use of this site for park purposes. Alternative C would improve access and integrate the northern and southern portions of the lower site. This would not constitute "constructive use" of Section 4(f) property.

As described for Alternative A, loss of 0.3 acre of parkland at the upper site would not impede access to other portions of this site from West Galer Street. This bridge location would not constitute "constructive use" of Section 4(f) property because access would not be restricted such that the activities and attributes of the upper site would be substantially impaired or diminished.

Aesthetics

Moving the existing bridge north of its location and out of the lower site could improve the aesthetic qualities of the lower site.

Under Alternative C, the remaining portions of the upper site would continue to provide views of the city and waterfront. The aesthetic attributes and related activities associated with the upper site would, therefore, not be substantially impaired or diminished and "constructive use" of Section 4(f) property would not occur.

Air Quality

The effects of Alternative C on air quality would be the same as described for Alternative A.

Noise

The effects of Alternative C related to noise would be the same as described for Alternative A.

Water

The effects of Alternative C related to water quality would be the same as described for Alternative A.

Land Use in Vicinity

Alternative C would not adversely affect land uses near the Smith Cove Acquisition Project parcels. Alternative C is designed to avoid residential displacements in the vicinity of the western bridge terminus and would not restrict the use and enjoyment of other nearby park property such as Smith Cove Park. Furthermore, Alternative C would not induce population or housing growth in the study area and would not create additional demand for public use of park and recreation facilities.

Functions of or Available Activities on Property

Alternative C would relocate the bridge structure north of its existing location over the lower site. While the existing bridge right-of-way occupies 0.4 acre over the northern portion of the lower site, the proposed right-of-way required under Alternative C would require only 0.003 acre in the far northwest corner of the lower site that is right-of-way for the existing bridge. Alternative C would remove a physical barrier (i.e., the existing Magnolia Bridge) that bisects this site and would integrate the northern and southern portions of the site. Therefore, Alternative C is expected to enhance the use and enjoyment of planned park and recreation activities on the lower site.

The loss of 0.3 acre of parkland at the upper site (approximately 12.5 percent of the total upper site acreage) would occur in the area immediately south of the existing bridge right-of-way. However, loss of this parkland would not impede access to other potions of the upper site that provide views of the city and waterfront. Therefore, Alternative C would not severely impair or restrict the use and enjoyment of this site for potential future viewing opportunities.

Avoidance Alternatives

As with Alternative A, analysis of avoidance alternatives for Alternative C is not required because the Joint Development Agreement between SDOT and Seattle Parks and Recreation exempts acquisition of portions of the Smith Cove Acquisition parcels from Section 4(f) requirements (FHWA 1987). Avoidance alternatives considered in the *Magnolia Bridge Replacement Draft Alignment Study Report* (HNTB Corporation 2003) are the same as described for Alternative A.

Terminal 91 Bicycle Path

The Terminal 91 bicycle path on the west side of the Port property would be displaced by the proposed alignment under Alternative C. Although a specific route has yet to be determined, it is anticipated that this segment of the path would be relocated on Port property east of the proposed ramp that would cut diagonally in front of the face of the Magnolia Bluff greenbelt. The capacity and amenities of the existing bicycle path would be accommodated along this new route. It is anticipated that a route farther east could provide more visual interest than the existing path because the existing bridge would be demolished, providing path users traveling south an unobstructed view towards the waterfront. Removal of the existing bridge could also reduce shading effects for users traveling to and from the Smith Cove area. Given that Alternative C would not create additional traffic capacity, relocating the path east of the proposed elevated road structure is not expected to result in access, air quality, noise, or water quality/quantity-related “constructive use” impacts.

Avoidance Alternatives

Prior to proceeding with Alternative C, and prior to issuance of the Final EIS and Record of Decision, the following steps will be undertaken:

- Support a finding that use can be avoided by planning to minimize harm, including development of detailed plans for designing and rerouting the bicycle path to provide equivalent or better facilities to pedestrians and bicyclists.

- If it is not possible to support a conclusion that the above measures will avoid the adverse impact, the analysis must support a finding that there is no feasible and prudent alternative to the use of the resource.

Local Greenbelts

Similar to Alternative A, the eastern and western approaches to Alternative C would be located near undeveloped land (greenbelts) on Magnolia and Queen Anne hillsides owned by Seattle Parks and Recreation. Compared to Alternative A, Alternative C would require a longer ramp diagonally in front of the face of the Magnolia greenbelt, which would result in increased visual encroachment on this landform from certain viewpoints, including views from the Galer Flyover and from Queen Anne Hill. However, this visual encroachment would not compromise the aesthetic features of the greenbelt. No direct taking or "constructive use" of these greenbelt properties would occur.

Boulevard System

As described for Alternative A, the western end of the bridge under Alternative C would tie into the boulevard-designated portion of West Galer Street. Construction within the boulevard-designated portion of West Galer Street would not result in a change from existing conditions and would not be considered use of Section 4(f) property. Furthermore, this alternative is not expected to result in access, aesthetic, air quality, noise, or water quality/quantity-related "constructive use" impacts on this Section 4(f) resource.

Parkland Demand

Because Alternative C would not create additional traffic capacity for access to Magnolia, the project would not induce population and housing growth in the study area. No additional demand on park and recreation facilities would occur under Alternative C compared to the No Build Alternative.

Historic, Cultural, and Archaeological Resources

Under Alternative C, the new bridge would be visible from the four properties that appear to meet the criteria for listing in the NRHP (Buildings 3, 5, 9 and 27). Potential indirect effects would result from visual changes caused by the introduction of the new bridge into the surrounding built environment. However, replacement of the bridge with a similar structure would not change the character of the existing industrial setting of these four properties. Any visual changes would not be of a magnitude or nature that would substantially impair the historic integrity that renders these sites potentially eligible for the NRHP.

Alternative C would not result in other "constructive use" impacts caused by traffic congestion or restricted access to the properties, air quality degradation, or excessive noise and vibration levels that would be out of character with the historic resources or would otherwise substantially impair these properties' historic features or attributes.

Building 9 would be directly affected by Alternative C. Demolition and removal of Building 9 would result in the loss of an approximate 15,300-square-foot structure used to store, repackage, and distribute lubricants and fuels. This building appears to be eligible for listing in the NRHP. Within 30 days of receiving the final Historic,

Cultural, and Archaeological Discipline Report, the Washington State Historic Preservation Office (SHPO) and/or Seattle Landmarks will make a final determination whether this structure is eligible for listing in the NRHP. If it is determined that Building 9 is NRHP-eligible, additional analysis will be warranted prior to selection of a preferred alternative.

Avoidance Alternatives

Prior to proceeding with Alternative C incorporating displacement of Building 9, and prior to issuance of the Final EIS and Record of Decision, the following steps will be undertaken:

- Perform more detailed analysis to support a finding that there is no feasible and prudent alternative to the use of this property.
- If there is no prudent and feasible alternative, develop specific planning to minimize harm by relocating this facility. Several options for relocation will be evaluated.

Alternative D

Smith Cove Acquisition Project

Similar to Alternative C, Alternative D would require construction of the new bridge over four of the six former U.S. Navy parkland parcels at Smith Cove. Because SDOT and Seattle Parks and Recreation have established a Joint Development Agreement consistent with Section 14 of the FHWA Section 4(f) Policy Paper (Appendix A), acquisition of portions of these parcels will be exempt from Section 4(f) requirements (FHWA 1987). The following analysis, therefore, is provided to describe the effect of Alternative D on the parcels, analyze the potential for "constructive use," and provide context for the development requirements included in the Joint Development Agreement.

Land Acquisition

As shown in Table 2, the bridge would be located over approximately 12,255 square feet (0.28 acre) of the upper site (Parcels C, D, and E). Over those parcels, the bridge would be at or close to grade and would occupy the entire area beneath the bridge. None of that area would be usable for park and recreation purposes.

Under Alternative D, the bridge would be located over a 456-square-foot (0.01-acre) corner of Parcel F, which is currently designated as a SDOT easement for the existing bridge. At that location, the bridge would be at a height of approximately 90 feet. No piers would be located within Parcel F and all of the parcel could be used for park and recreation purposes.

In total, Alternative D would be located over a total of approximately 12,711 square feet (0.29 acre) of existing parkland owned and maintained by Seattle Parks and Recreation. Removing the existing Magnolia Bridge easement over Parcel F would result in 17,622 square feet (0.4 acre) of land that could be transferred to Seattle Parks and Recreation and redeveloped over time for park and recreation purposes. Therefore, the net direct benefit under Alternative D would be an additional 4,911 square feet (0.11 acre) of city-owned parkland.

Access

Alternative D would relocate the bridge structure north of its existing location over the lower site and would remove a physical barrier (i.e., the existing Magnolia Bridge) that bisects and partially impedes full use of this site for park purposes. Alternative D would improve access and integrate the northern and southern portions of the lower site. This would not constitute "constructive use" of Section 4(f) property.

As described for Alternatives A and C, loss of 0.28 acre of parkland at the upper site would not impede access to other potions of this site from West Galer Street. This bridge location would not constitute "constructive use" of Section 4(f) property because access would not be restricted such that the activities and attributes of the upper site would be substantially impaired or diminished.

Aesthetics

Moving the existing bridge north of its location and out of the lower site could improve the aesthetic qualities of the lower site.

Under Alternative D, the remaining portions of the upper site would continue to provide views of the city and waterfront. The aesthetic attributes and related activities associated with the upper site would, therefore, not be substantially impaired or diminished, and "constructive use" of Section 4(f) property would not occur.

Air Quality

The effects of Alternative D on air quality would be the same as described for Alternative A.

Noise

The effects of Alternative D related to noise would be the same as described for Alternative A.

Water

The effects of Alternative D related to water quality would be the same as described for Alternative A.

Land Use in Vicinity

Alternative D would not adversely affect land uses near the Smith Cove Acquisition Project parcels. Alternative D is designed to avoid residential displacements in the vicinity of the western bridge terminus and would not restrict the use and enjoyment of other nearby park property such as Smith Cove Park. Furthermore, Alternative D would not induce population or housing growth in the study area and would not create additional demand for public use of park and recreation facilities.

Functions of or Available Activities on Property

Alternative D would relocate the bridge structure north of its existing location over the lower site. While the existing bridge right-of-way occupies 0.4 acre over the northern portion of the lower site, the proposed right-of-way required under Alternative D would require only 0.01 acre in the far northwest corner of this site. Alternative D would remove a physical barrier (i.e., the existing Magnolia Bridge)

that bisects this site and would integrate the northern and southern portions of the site. Therefore, Alternative D is expected to enhance the use and enjoyment of planned park and recreation activities on the lower site.

The loss of 0.28 acre of parkland at the upper site (approximately 11.5 percent of the total upper site acreage) would occur in the area immediately south of the existing bridge right-of-way. However, loss of this parkland would not impede access to other potions of the upper site that provide views of the city and waterfront. Therefore, Alternative D would not severely impair or restrict the use and enjoyment of this site for potential future viewing opportunities.

Avoidance Alternatives

As with Alternative A, analysis of avoidance alternatives for Alternative D is not required because the Joint Development Agreement between SDOT and Seattle Parks and Recreation exempts acquisition of portions of the Smith Cove Acquisition parcels from Section 4(f) requirements (FHWA 1987). Avoidance alternatives considered in the *Magnolia Bridge Replacement Draft Alignment Study Report* (HNTB Corporation 2003) are the same as described for Alternative A. Terminal 91 Bicycle Path

The eastern and western segments of the Alternative D bridge structure would cross over the Terminal 91 bicycle path at two locations. No direct "taking" of this bicycle path would occur. Given that Alternative D would not create additional traffic capacity, and that the bicycle path already crosses under the existing Magnolia Bridge, Alternative D would not result in "constructive use" impacts such as increased noise levels, compromised aesthetic features, restricted access, or air quality degradation of a magnitude or nature that would substantially impair this bicycle path's activities, features, or attributes.

Local Greenbelts

Similar to Alternatives A and C, the eastern and western approaches to Alternative D would be located near undeveloped land (greenbelts) on Magnolia and Queen Anne hillsides owned by Seattle Parks and Recreation. Compared to Alternative A, Alternative D would require a slightly longer ramp diagonally in front of the face of the Magnolia greenbelt, which would result in increased visual encroachment on this landform from certain viewpoints, including views from the Galer Flyover and from Queen Anne Hill. However, this visual encroachment would not compromise the aesthetic features of the greenbelt. No direct taking or "constructive use" of these greenbelt properties would occur.

Boulevard System

As described for Alternatives A and C, the western end of the bridge under Alternative D would tie into the boulevard-designated portion of West Galer Street. Construction within the boulevard-designated portion of West Galer Street would not result in a change from existing conditions and would not be considered use of Section 4(f) property. Furthermore, this alternative is not expected to result in access, aesthetic, air quality, noise, or water quality/quantity-related "constructive use" impacts on this Section 4(f) resource.

Parkland Demand

Because Alternative D would not create additional traffic capacity for access to Magnolia, the project would not induce population and housing growth in the study area. No additional demand on park and recreation facilities would occur under Alternative D compared to the No Build Alternative.

Historic, Cultural, and Archaeological Resources

Under Alternative D, the new bridge would be visible from the four properties that appear to meet the criteria for listing in the NRHP (Buildings 3, 5, 9, and 27). Potential indirect effects would result from visual changes caused by the introduction of the new bridge into the surrounding built environment. However, replacement of the bridge with a similar structure would not change the character of the existing industrial setting of these four properties. Any visual changes would not be of a magnitude or nature that would substantially impair the historic integrity that renders these sites potentially eligible for the NRHP.

Alternative D would not result in other "constructive use" impacts caused by traffic congestion or restricted access to the properties, air quality degradation, or excessive noise and vibration levels that would be out of character with the historic resources or would otherwise substantially impair these properties' historic features or attributes.

Building 9 would be directly affected by Alternative D. Demolition and removal of Building 9 would result in the loss of an approximate 15,300-square-foot structure used to store, repackage, and distribute lubricants and fuels. This building appears to be eligible for listing in the NRHP. Within 30 days of receiving the final Historic, Cultural, and Archaeological Discipline Report, SHPO and/or Seattle Landmarks will make a final determination whether these structures are eligible for listing in the NRHP. If it is determined that Buildings 9 is NRHP-eligible, additional analysis will be warranted prior to selection of a preferred alternative.

Avoidance Alternatives

Prior to proceeding with Alternative D incorporating displacement of Building 9, and prior to issuance of the Final EIS and Record of Decision, the following steps will be undertaken:

- Perform more detailed analysis to support a finding that there is no feasible and prudent alternative to the use of these two properties.
- If there is no prudent and feasible alternative, develop specific planning to minimize harm by relocating these two facilities. Several options for relocation will be evaluated.

No Build Alternative

Because no impacts related to Section 4(f) properties and public lands have been identified under the No Build Alternative, no mitigation would be required.

Alternative A

The directors of SDOT and Seattle Parks and Recreation have established a Joint Development Agreement for construction of the new bridge over the Smith Cove Acquisition Parcels (Appendix A). As provided in Section 14 of the FHWA Section 4(f) Policy Paper, the Joint Development Agreement will allow construction over portions of the Smith Cove Acquisition parcels to be exempt from Section 4(f) requirements (FHWA 1987).

The Joint Development Agreement includes commitment to mitigation measures to compensate for lost parkland. These measures could include any of the following:

- The SDOT easement for the existing bridge over Parcel F of the Smith Cove Acquisition could be transferred to Seattle Parks and Recreation and could be developed over time for park and recreational purposes.
- A land swap could occur under which the area needed for the new bridge right-of-way over the Smith Cove Acquisition parcels is transferred to SDOT, and other nearby land (in addition to the existing bridge easement) is transferred to Seattle Parks and Recreation for future park development. Under any land swap, sufficient new parkland would be established so that no net loss of parkland would occur.
- Enhancement measures could be provided on remaining park property at the acquisitions site. Developing a formal parking area for the upper site would be one option.
- SDOT could also provide for replacement recreational amenities at an established or planned park or recreational site in the general vicinity.

No other impacts related to Section 4(f) recreation or historic, cultural, and archaeological resources have been identified that would require mitigation.

Alternative C

Under Alternative C, the Joint Development Agreement would commit to mitigation measures for construction of the new bridge over the Smith Cove Acquisition Parcels as described for Alternative A.

As mitigation for direct impacts to the Terminal 91 bicycle path under Alternative C, detailed plans would be developed for rerouting the bicycle path on Port property east of the proposed ramp that would cut diagonally in front of the face of the Magnolia Bluff greenbelt. The new route would be designed to provide equivalent or better facilities for pedestrians and bicyclists.

Further development of mitigation measures for direct impacts to historic resources would be closely coordinated with the FHWA, the WSDOT Cultural Resources Coordinator, the Seattle Historic Preservation Officer, and the SHPO. These mitigation approaches will then be the basis for discussion leading to a Section 106 Memorandum of Agreement (MOA) or Programmatic Agreement among these parties to ensure that historic resources are adequately protected.

Potential mitigation measures for direct impacts on the historic structure to be demolished under Alternative C (Building 9) would include, but are not limited to, the following:

- Relocate or alter historic buildings as an alternative to demolition when possible.
- Document any historic properties to be demolished to Historic American Building Survey/Historic American Engineering Record standards.

Alternative D

Under Alternative D, the Joint Development Agreement would commit to mitigation measures for construction of the new bridge over the Smith Cove Acquisition Parcels as described for Alternative A.

Potential mitigation measures for direct impacts on the historic structure to be demolished under Alternative D, Building 9, would be the same as those described above for Alternative C.

No Build Alternative

Impacts

No construction impacts would occur under the No Build Alternative.

Mitigation Measures

No construction impacts would occur under the No Build Alternative, and no mitigation measures are proposed.

Alternative A

Impacts

Recreation Section 4(f) Resources

For a period of up to eight months near the beginning of project construction, construction activities would be ongoing within the northern one-third of Smith Cove Acquisition Parcel F and within portions of the upper site. During that period, the construction area would not be available for recreational use. In addition, noise, dust, and visual effects from construction would make use of the remaining parkland to the south less desirable for potential park users. Near the end of the project construction period, existing bridge demolition would require about two months. This would require the area immediately south of the existing bridge which would be needed for equipment access and to maintain a safe distance from the demolition. The proposed temporary equipment marshaling or laydown area for Alternative A would be located east of 23rd Avenue West and would not encroach upon the Smith Cove Acquisition parcels.

Construction of Alternative A would also require activities over and in the bicycle path that is located on the perimeter of the Port of Seattle's North Bay property. Bicycle and pedestrian movement on the pathway would be maintained across the construction corridor on 23rd Avenue W, but may be temporarily rerouted. The Terminal 91 bicycle path on the east side of the Port property would be open to pedestrians and bicycles up to its intersection with the 21st Avenue West surface street for all stages of construction. Both bicycle/pedestrian paths may have short-term closures for some overhead construction and existing bridge demolition operations. Construction impacts would be temporary and would not have substantial long-term access, aesthetics, air quality, noise, or water quality/quantity related effects on Section 4(f) recreation property. These effects are not anticipated to detract from and interfere with the long-term use and enjoyment of the Smith Cove Acquisition Project parkland, local greenbelts, or Seattle's boulevard system. As a result, no "constructive use" would occur to these Section 4(f) recreation properties.

Historic, Cultural, and Archaeological Section 4(f) Resources

The extent of archaeological resources below the ground surface is unknown; therefore, archaeological impacts could result from constructing Alternative A. Section 4(f) only applies to archaeological sites on or eligible for inclusion on the NRHP and which warrant preservation in place, including those discovered during construction. Section 4(f) would not apply if the archaeological resource is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place.

Mitigation Measures

Recreation Section 4(f) Resources

A construction management plan would be prepared for the project. The plan would identify mitigation measures to be implemented during the construction phases to ensure public safety and continued circulation on the bicycle pathway around the Port of Seattle North Bay property. Signs and detour routes would be posted on the bicycle pathway to direct cyclists and pedestrians during construction. Furthermore, comprehensive best management practices would be implemented throughout the construction period to minimize environmental risks (see the Air Quality, Noise, and Water Quality discipline reports).

The Joint Development Agreement between SDOT and Seattle Parks and Recreation for construction over the Smith Cove Acquisition parcels could also address construction issues. The Joint Development Agreement could require that replacement parkland be established and open to the public prior to the beginning of bridge construction to compensate for the loss of use of a portion of Parcel F during the construction period.

Historic, Cultural, and Archaeological Section 4(f) Resources

Once a preferred alternative is chosen and before the Record of Decision is issued, a MOA signed by the City of Seattle, WSDOT, OAHP, FHWA, and any affected tribes would be prepared, identifying mitigation measures that would be carried out if archaeological resources are discovered during construction. The MOA would include monitoring protocols, an unanticipated discovery and treatment plan, security measures, and a curation plan. The monitoring plan would identify areas that would be monitored by an archaeologist during construction. In addition, a treatment plan would be in place to address unanticipated discoveries of cultural resources during construction. Treatment plans are required by federal agencies for cultural resource management projects that contain resources determined to be eligible for listing in the NRHP.

If construction activities inadvertently discover archaeological resources, work would be halted in the immediate area and SHPO in Olympia would be contacted. Work would be halted until such time as further investigation and appropriate consultation is concluded. In the unlikely event of the discovery of human remains, work would be immediately halted in the discovery area, and the remains would be covered and secured against further disturbance. Law enforcement personnel, the county coroner, the SHPO, WSDOT, and representatives of the affected tribe(s) would be contacted immediately.

If archaeological sites discovered during construction are determined to be eligible for the NRHP and preservation of the resource in place is warranted, the Section 4(f) process would be initiated. In this instance, the evaluation of feasible and prudent alternatives would take into account the level of investment already made into the project. The Section 4(f) process would be expedited and the resource review process, including consultation with other agencies, would be shortened, as appropriate (FHWA 1987).

Alternative C

Impacts

Construction impacts related to Section 4(f) resources and public lands under Alternative C would be similar to but less than those described for Alternative A. Construction activities within the Smith Cove Acquisition parcels would occur over a shorter period of time, approximately 2.5 months. Existing bridge demolition would require the use of the park area immediately south of the existing bridge for about two months. Once demolition of the existing bridge is complete, only the far northwest corners of Parcel F and portions of the upper site would need to be occupied. The proposed temporary equipment marshaling or laydown area would be located north of Parcel F and would not encroach upon the Smith Cove Acquisition parcels.

The potential for discovery of archaeological resources during construction of Alternative C would be similar to that described for Alternative A.

Mitigation Measures

Mitigation measures under Alternative C would be the same as those described for Alternative A.

Alternative D

Impacts

Construction impacts related to Section 4(f) resources and public lands under Alternative D would be similar to but less than those described for Alternative A. Construction activities within the Smith Cove Acquisition parcels would occur over a shorter period of time, approximately 2.7 months. Existing bridge demolition would require the use of the park area immediately south of the existing bridge for about two months. Once demolition of the existing bridge is complete, only the far northwest corners of Parcel F and portions of the upper site would need to be occupied. The proposed temporary equipment marshaling or laydown area would be located north of Parcel F and would not encroach upon the Smith Cove Acquisition parcels.

The potential for discovery of archaeological resources during construction of Alternative D would be similar to that described for Alternative A.

Mitigation Measures

Mitigation measures under Alternative D would be the same as those described for Alternative A.

Affected Environment

Protection of certain public lands and all historic sites was originally mandated in Section 4(f) of the 1966 Department of Transportation Act. Section 4(f) declares a national policy to preserve, where possible, "the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Under Section 4(f), the FWHA and other USDOT agencies can only approve the use of these lands if no feasible and prudent alternative exists, and the sponsoring agency demonstrates that all possible planning to minimize harm has been accomplished. Use of Section 4(f) land is not limited to property acquisitions. FHWA rules require that Section 4(f) evaluation be called into effect even if the project does not actually intrude into a protected use. This evaluation occurs when a project's impacts in the proximity of protected areas are so severe that the resources' activities, features, or attributes are substantially impaired.

A few parks and recreation facilities are located in the immediate vicinity of the project alternatives (see Figure 11). Smith Cove Park is located on Elliott Bay approximately 1,000 feet south of the existing Magnolia Bridge. This park, which provides public waterfront access, is not owned by the City, but is on Port of Seattle land. Thorndyke Park and the designated park boulevards, West Galer Street, Magnolia Way West, and Magnolia Boulevard West are located to the west and north of the bridge, and a bike path circumscribes the Port of Seattle North Bay property. In August 2003, Seattle Parks and Recreation acquired 7.3 acres of property from the U.S. Navy immediately north of Smith Cove for park, recreation, transportation and open space purposes. (This area is referred to as the Smith Cove Acquisition Project parcels. See Figure 12.) Other undeveloped parcels owned by Seattle Parks and Recreation are located on the Magnolia and Queen Anne hillsides and Elliott Bay tidelands.

Cultural resources staff conducted field investigations to identify archaeological resources along each alternative alignment and to identify significant historic structures in the APE. No known archaeological sites were identified within the study area. However, because less than 10 percent of the study area was investigated for archaeological resources and no subsurface testing was conducted, unknown archaeological resources could be present in the study area. Twenty historical structures were identified during the field survey; four of these appear to meet the criteria for listing in the NRHP.

Impacts

Operational Impacts

No Build Alternative

Under the No Build Alternative, no adverse impacts to lands identified as Section 4(f) resources would occur that would constitute "use" or "constructive use" of such resources.

Alternative A

Alternative A would require construction of the new bridge over portions of three of the six parcels at Smith Cove acquired by the City of Seattle from the U.S. Navy in August 2003 for park and transportation purposes. Alternative A would be located over a total 0.77 acre of this parkland. Because SDOT and Seattle Parks and Recreation have established a Joint Development Agreement consistent with Section 14 of the FHWA Section 4(f) Policy Paper (Appendix A), acquisition of portions of these parcels will be exempt from Section 4(f) requirements (FHWA 1987).

The eastern and western segments of the Alternative A bridge structure would cross over the Terminal 91 bicycle path at two locations. No direct "taking" or "constructive use" impacts of this bicycle path would occur.

The eastern and western approaches to Alternative A would be located near undeveloped greenbelts on hillsides owned by Seattle Parks and Recreation. No direct "taking" or "constructive use" impacts of these greenbelt properties would occur.

The western end of the bridge would tie into the boulevard-designated portion of West Galer Street. Any construction within this portion would be no more than the minimum necessary to implement the connection from the bridge and would not result in a change from existing conditions.

Because Alternative A would not create additional traffic capacity for access to Magnolia, no additional demand on park and recreation facilities would occur.

No use or "constructive use" of historic properties has been identified.

Alternative C

Alternative C would be located over 0.31 acre of parkland at the Smith Cove Acquisition Project site. As described for Alternative A, the Joint Development Agreement between SDOT and Seattle Parks and Recreation would exempt this use of parkland from Section 4(f) requirements.

The Terminal 91 bicycle path on the west side of the Port property would be displaced by the proposed alignment under Alternative C. It is anticipated that this segment of the path would be relocated on Port property east of the proposed ramp that would cut diagonally in front of the face of the Magnolia Bluff greenbelt. Given that Alternative C would not create additional traffic capacity, relocating the path east of the proposed elevated road structure is not expected to result in access, air quality, noise, or water quality/quantity-related "constructive use" impacts.

Potential operational impacts to the greenbelts and boulevard-designated potion of West Galer Street under Alternative C would be the same as those described for Alternative A.

Alternative C would result in the demolition and permanent removal of one building that appears to be eligible for listing in the NRHP—Building 9. There would be no "constructive use" of the three remaining historic properties.

Alternative D

Alternative D would be located over 0.29 acre of parkland at the Smith Cove Acquisition Project site. As described for Alternative A, the Joint Development

Agreement between SDOT and Seattle Parks and Recreation would exempt this use of parkland from Section 4(f) requirements.

The eastern and western segments of the Alternative D bridge structure would cross over the Terminal 91 bicycle path at two locations. No direct "taking" or "constructive use" impacts of this bicycle path would occur.

Potential operational impacts to the greenbelts and boulevard-designated potion of West Galer Street under Alternative D would be the same as those described for Alternative A.

Alternative D would result in the demolition and permanent removal of one building that appears to be eligible for listing in the NRHP—Building 9. There would be no "constructive use" of the three remaining historic properties.

Construction Impacts

For a period of up to eight months, construction activities for Alternative A would be ongoing within the northern one-third of Smith Cove Acquisition Parcel F and within portions of the upper site. During that period, the construction area would not be available for recreational use. In addition, noise, dust, and visual effects from construction would make use of the remaining parkland to the south less desirable for potential park users. Existing bridge demolition during the last two months of project construction would require the use of park property nears the bridge for equipment access and a safety buffer. Construction would also require activities over and in the bicycle path that is located on the perimeter of the Port of Seattle's North Bay property.

Construction impacts related to Section 4(f) recreation resources and public lands under Alternatives C and D would occur over a shorter period of time, approximately 2.5 months for Alternative C and 2.7 months for Alternative D. Furthermore, only the far northwest corners of Parcel F and portions of the upper site would need to be occupied. Both Alternatives C and D would have the same parkland impact as Alternative A during the two months for existing bridge demolition.

The extent of archaeological resources below the ground surface is unknown; therefore, archaeological impacts could result from constructing any one of the Build Alternatives. Section 4(f) would only apply to archaeological sites discovered during construction that are on or eligible for inclusion on the NRHP and which warrant preservation in place.

Construction activities associated with the Build Alternatives would be temporary and would not have substantial long-term access, aesthetics, air quality, noise, or water quality/quantity related effects on any Section 4(f) property.

Secondary and Cumulative Impacts

No secondary or cumulative impacts related to public lands and Section 4(f) resources have been identified. The project alternatives would not induce growth and would not contribute to future increased use of park and recreation lands in the Magnolia, Interbay, and Queen Anne areas.

The Build Alternatives have been designed to replace the existing bridge and would not increase the capacity of traffic to travel to and from Magnolia. The alternatives,

therefore, would not cause population growth or increased access and would not contribute to future increased use of park and recreation resources in the Magnolia, Interbay, and Queen Anne areas.

The Magnolia Bridge Replacement Project, however, is one of several projects in the study area in the planning and evaluation phases of development. Planning is underway for redeveloping the large areas of underutilized Port land in the area. The Port of Seattle Master Planning for North Bay will influence future transportation patterns, land use patterns, and economic conditions. North Bay redevelopment has the potential to bring greater numbers of people into the study area, which could incrementally increase the demand for local park and recreation facilities (see the Land Use and Consistency with Plans and Policies Discipline Report for additional information).

The Magnolia Bridge Replacement Project combined with other planned projects could also have cumulative visual effects on some of the historic resources identified in the APE. However, because replacing the bridge would not increase traffic flow and the character of the setting would not change, this project is not expected to contribute to substantial cumulative visual impacts on historic resources.

Mitigation Measures

Operational Mitigation

The directors of SDOT and Seattle Parks and Recreation have signed a letter agreeing to establish a Joint Development Agreement for construction of the new bridge over the Smith Cove Acquisition Parcels, which would exempt such activities from Section 4(f) requirements (Appendix A). The Joint Development Agreement would include mitigation measures to compensate for lost parkland; these measures would apply to all three Build Alternatives. Measures could include transferring the SDOT easement through the Smith Cove Acquisition parcels to Seattle Parks and Recreation, a land swap to establish new parkland nearby, enhancement measures on remaining park property, and replacement recreational amenities at a park or recreational site in the general vicinity.

As mitigation for direct impacts to the Terminal 91 bicycle path under Alternative C, detailed plans would be developed for rerouting the bicycle path on Port property east of the proposed ramp that would cut diagonally in front of the face of the Magnolia Bluff greenbelt. The new route would be designed to provide equivalent or better facilities for pedestrians and bicyclists.

Further development of mitigation measures for direct impacts to historic resources will be closely coordinated with the FHWA, the WSDOT Cultural Resources Coordinator, the Seattle Historic Preservation Officer, and the SHPO. These mitigation approaches will then be the basis for discussion leading to a Section 106 MOA or Programmatic Agreement among these parties to ensure that historic resources are adequately protected.

Potential mitigation measures for direct impacts on the historic structure to be demolished under Alternatives C and D would include, but are not limited to, the following:

- Relocate or alter the historic building as an alternative to demolition, when possible.

- Document any historic properties to be demolished to Historic American Building Survey/Historic American Engineering Record standards.

Construction Mitigation

For all Build Alternatives, a construction management plan would be prepared to manage construction traffic in the vicinity of the project. The plan would identify mitigation measures to be implemented during the construction phases to ensure protection of public safety and continued circulation on the bicycle pathway around the Port of Seattle North Bay property. The Joint Development Agreement could require that replacement parkland be established and open to the public prior to the beginning of bridge construction.

Once a preferred alternative is chosen and before the Record of Decision is issued, a MOA signed by the City of Seattle, WSDOT, OAHP, FHWA, and any affected tribes would be prepared, identifying mitigation measures that would be carried out if archaeological resources are discovered during construction. The MOA would be prepared for any one the Build Alternatives. If archaeological sites discovered during construction are determined to be eligible for the NRHP and preservation of the resource in place is warranted, the Section 4(f) process would be expedited and the resource review process, including consultation with other agencies, would be shortened, as appropriate (FHWA 1987).

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Appendix A
Joint Development Agreement

ORIGINAL

1 of 2

JOINT DEVELOPMENT AGREEMENT

Seattle Department of Transportation
And
Seattle Department of Parks and Recreation

Whereas; The Seattle Department of Transportation (SDOT) initiated the planning process for replacing the Magnolia Bridge early in 2002, and

Whereas; In January 2003 a determination was made by SDOT, in consultation with Washington State Department of Transportation (WSDOT), to develop an Environmental Impact Statement (EIS) to evaluate alternatives and select a preferred alternative for replacing the Magnolia Bridge, and

Whereas; In August 2003 the City of Seattle (City) purchased from the US Navy certain properties (Smith Cove Properties) which are adjacent to and underneath the existing Magnolia Bridge and its approaches, and

Whereas; The City placed said properties under the jurisdiction of the Superintendent of Parks, for park purposes, except that portion which is occupied by the existing Magnolia Bridge which was placed under the jurisdiction of the Director of SDOT, and

Whereas; Each of the Magnolia Bridge Replacement alternatives being evaluated at the time of the acquisition of the property for parks used a portion of the acquired property, and

Whereas; In March 2006 the City selected a preferred alternative for replacing the Magnolia Bridge, and

Whereas; The preferred alternative is located south of and adjacent to the existing bridge requiring use of the Department of Parks and Recreation (Parks) property, and

Whereas; Parks has no long range plans to alter upper existing park, Parcels A through E shown in Attachment A, use as a view point, and

Whereas; The preferred alternative's use of a small portion of the view point area is not a significant impact and through joint design could improve access to and overall use of the viewpoint, and

Whereas; The lower "ball field for kids" area, Parcel F shown in Attachment A, is currently divided into two parcels by the footprint of the existing Magnolia Bridge, and

Whereas; The footprint of the preferred alternative continues to divide Parcel F but the proposed column spacing will result in a net increase of usable park area, and

ORIGINAL

Whereas; Parcel F has been improved as a temporary use pending further planning and possible redevelopment, and

Whereas; Early discussions have taken place between Parks and the Port of Seattle concerning the possible trade of all or a portion of Parcel F for adjacent waterfront property,

Now Therefore SDOT and Parks agree as follows:

SDOT and Parks will jointly plan for the development and/or redevelopment of each of their respective facilities in and adjacent to the Smith Cove Properties. This joint planning effort is to ensure minimal impact(s) upon one another's facilities, to agree on any mitigation measures, and to develop the best overall combination of public facilities at this location for the citizens of Seattle.

For the use of property currently under the jurisdiction of Parks by the replacement Magnolia Bridge, Parks and SDOT will jointly sponsor legislation to the City Council to transfer jurisdiction of those rights to SDOT which are necessary to construct and maintain the bridge and roadway over and across said properties.

When a replacement Magnolia Bridge is constructed and the existing bridge is removed, SDOT and Parks will jointly sponsor legislation to the City Council to transfer jurisdiction to Parks those properties under the jurisdiction of SDOT bisecting Parcel F, as long as Parcel F is still owned by the City and under the jurisdiction of Parks.

Director of Transportation:

2/6/7

Grace Crunican Date

Superintendent of Parks:

1/24/07

Kenneth R. Bounds Date

APPROXIMATE AREA OF RIGHT OF WAY TAKE (SQ. FT.) FROM EACH TRANSFER PARCEL FOR PROPOSED ALIGNMENT

	PARCEL	ALIGNMENT
SMITH COVE ACQUISITION UPPER SITE	A	0
	B	0
	C	2,874
	D	20
	E	4,992
	TOTAL	7,886
SMITH COVE ACQUISITION LOWER SITE	F	25,645
	EX.BRIDGE	(17,622)
	TOTAL	8,023
US NAVY SITE	G	14,430
	EX.BRIDGE	(7,226)
	TOTAL	7,204
EX. CITY R.O.W.	EX.BRIDGE	(24,801)

NOTE: WERE TAKEN FROM SMITH COVE SURVEY BY JAMES A. STONE, P.L.S. DATED 13 FEB, 2004, MARKED UNOFFICIAL DOCUMENT. OTHER PARCEL LINES ARE FROM CITY OF SEATTLE G.I.S.

Joint Development Agreement
SDOT and DPR
Attachment A